Textile Industries

Formerly "COTTON"

A W. R. C. Smith Publication

AUGUST, 1953

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THIS WARP PRE-DRYER

AND SLASHING EFFICIENCY! WILL INCREASE WEAVING

THE TEXTILE SHOPS' WARP PRE-DRYING MACHINE will increase efficiency in your slashing and weaving operations by drying wet warps prior to sizing.

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Write for complete information.

The Textile Shops

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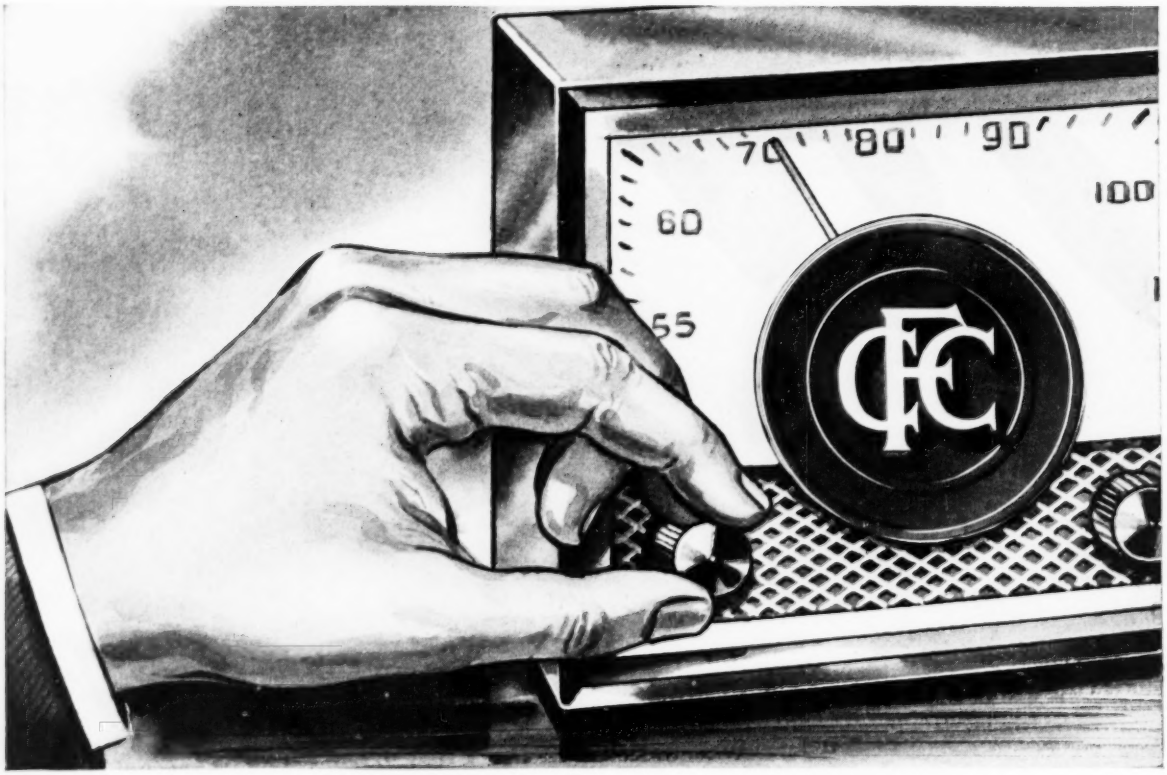

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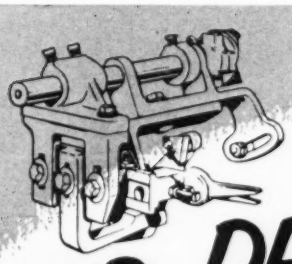

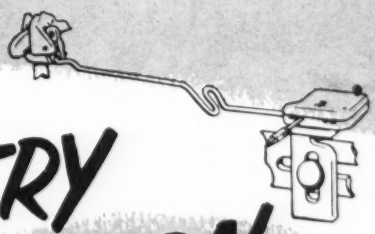

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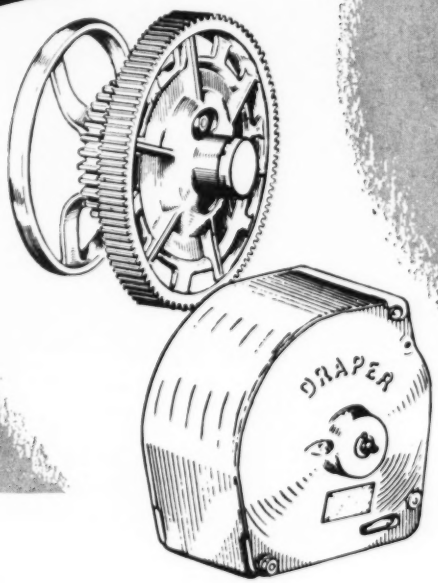
with DRAPER PACKAGED UNITS



Delivery has been speeded up on repairs, changeovers, and mechanisms from our newly modernized East Spartanburg plant. Popular parts, mechanisms, and supplies are stocked in Hopedale, Spartanburg, and Atlanta warehouses.

For fast delivery, fast application, and the best service, use Draper parts.

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No more rummaging for parts — one mechanism per box, one box per loom when you buy Draper . . .

- MIDGET FEELERS
- STAFFORD THREAD CUTTERS
- SELVAGE MOTIONS
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- LET-OFFS
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- FILLING MOTIONS
- SPRING WIND-UPS

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DRAPER CORPORATION

ATLANTA, GA. HOPEDALE, MASS. SPARTANBURG, S.C.

THE WORLD'S LARGEST MANUFACTURER OF AUTOMATIC LOOMS

STAZON HERE...

STAYS OFF HERE!

BIG THING to remember about *Texaco Stazon* is that it *stays on* the bearing surfaces — does not creep, splatter or drip. Use it for top rolls, saddles, roll stands or shell roll mandrels and get cleaner yarn. Use it for loom crank and cam shaft bearings and cloth comes through without oil stain.

Texaco Stazon has other advantages, too: It is not affected by humidity, and will not form gummy deposits. It is easily applied and feeds properly in any lubricating system — a long-lasting lubricant that requires fewer applications.

For spindle lubrication, use *Texaco Spindura Oil* and increase production of cleaner, smoother yarn. For fibre conditioning, use *Texaco Texspray Compound* and get stronger yarn of more uniform count.

Let a Texaco Lubrication Engineer help you in every department of your mill. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

NBP ABC CCA **Textile Industries** Vol. 117, No. 8 August, 1953

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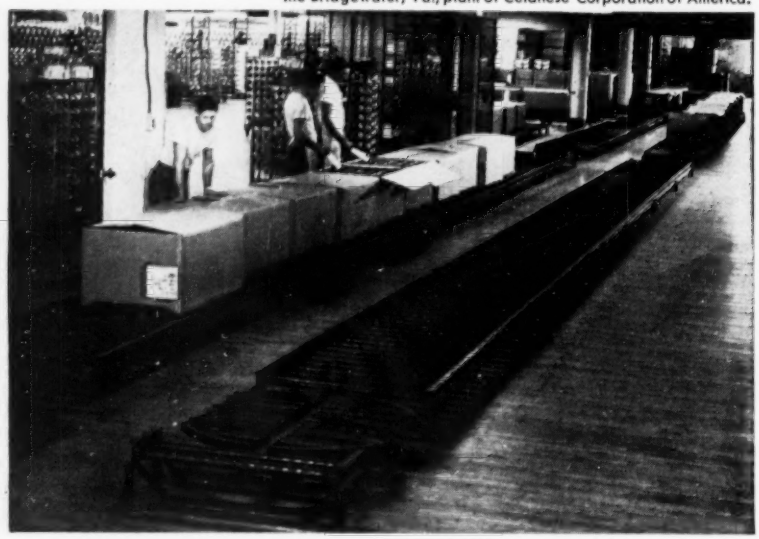
foot-friendly!

Worker-comfort, cleanliness, lasting economy and ease of maintenance, are dividends of this floor of Northern Hard Maple in the Bridgewater, Va., plant of Celanese Corporation of America.



There's a world of thrifty wear in

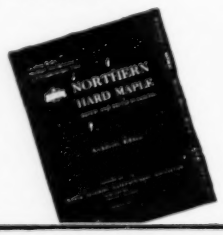
NORTHERN HARD MAPLE

• When the old-timers laid floors of cheerful, *resilient*, Northern Hard Maple in their mills, they did the whole textile industry a good turn. As these fine old floors stood up year after year, the brush and broom brought their lustre to satin-smoothness. No other floor or floor covering has ever been found to match the way Maple fights abrasion without splintering, offers no lodgement to dirt or lint, resists oil and grease. And maintenance of Maple is *so easy*. "There's always a new floor underneath."

As every inspector knows, *weariness* is the greatest cause of mistakes and slips. Uncomfortable floors make workers weary quickly. Maple floors are "foot-friendly"—they keep folks fit and alert longer. This pays very real profit, year-in, year-out.

For today's TOP buy in flooring, **MFMA** recommends either Second or Second-and-Better grades. These beautiful, absolutely sound, *economy* grades are now bundled 2 feet and longer as the stock will produce. They save money today, and in the years ahead.

See Sweet's
(Arch. 12K-MA)
•
Write for NEW TEXTBOOK ON FLOORING



MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 591, Pure Oil Bldg., 35 East Wacker Drive
CHICAGO 1, ILLINOIS

FLOOR WITH *NORTHERN* HARD MAPLE
BEECH AND BIRCH

Shorts and Remnants

► Expanded selling seems to be in the air. A good textile chemical manufacturer writes for ideas on new chemical specialties for manufacturing and selling. A local metal fabricator wants to make and sell textile items. Here's a hot tip for some enterprising salesmen. Remember all those lightning rods sold and installed in the last half century? The charge in these must be about running out. Salesmen could use a battery charger and car and sell a lightning rod recharger service. We would do it ourselves, but we got a lot of unfinished textile business and it's summer time and we're dragging a little—need a little recharge ourselves, maybe.

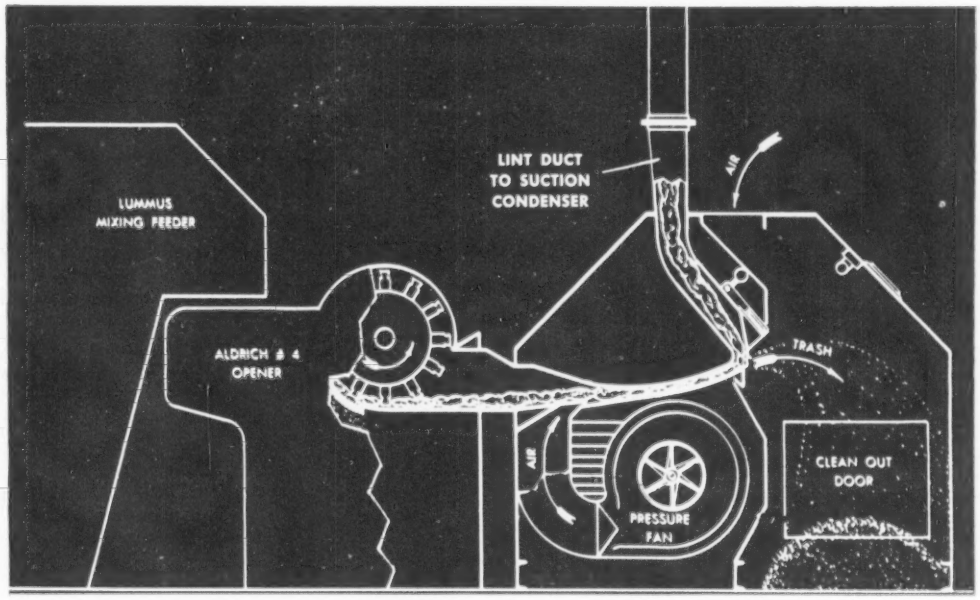
► Which reminds us that "Conducting an advertising campaign without promoting it to your salesmen is like winking at a pretty girl in the dark—you know what you are doing but no one else does." That's a tip from our friend, Bob Guthrie, Charlotte, N. C., district manager for TI advertiser G. H. Tennant Co., who recently turned public speaker for the Advertising Club of that fair city. Could be something there. We always advocate keeping salesmen and representatives sold on how advertising is helping them as well as the mills or the customers of the mills.

► Speaking of Charlotte, an erstwhile competitor, Roy Shinn, has a new magazine, "Our Town," for and about that city that was good enough that the City Water Department addressed and mailed out his first issue. Now any ambitious and philanthropic textile organization that wants to mail out about 24,000 copies of TI next month, step right up and don't crowd.

► We always figured pin-up gals were poison so far as textiles go, what with the skimpy clothing, if any, and all. But M. Van Scoy Advertising Agency of Los Angeles wants to know if we will publish ads on "Nice Pin-Ups . . . kind you will appreciate in your home." He does say "No Nudes" and if you don't like pin-ups he seems to have reading glasses with gold plated frames, or "Lonely Clubs."

► Her (or His) Majesty—Queen

Just BLOW the Trash Out of Your Cotton



. . . with *Super-Jet*

Cotton can be cleaned without the use of saws or other harsh treatment. The Super-Jet Cleaner contains no moving parts, and can not injure the lint, or break up the foreign matter into neps and pepper trash.

The Super-Jet Cleaner was designed for the particular purpose of removing grass, stems, bark, shale, and other trash commonly found in machine-picked cotton, as well as the motes found in all cotton.

For removing this heavy trash, it is without an equal.

ALDRICH-LUMMUS CLEANING SYSTEM

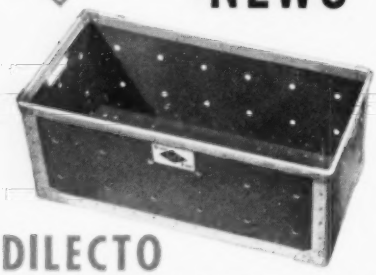
Made by LUMMUS COTTON GIN CO. Columbus, Ga. and ALDRICH MACHINE WORKS Greenwood, S. C.

Sold and Installed by AldricH MachinE Greenwood WorkS South Carolina

...From SPARTANBURG, S.C.

CDF

TEXTILE NEWS



DILECTO

CONDITIONING BOXES

Want boxes that resist moisture, chemicals, steam, and dyes? C-D-F builds a superior line of boxes and trucks from Dilecto, a tough laminated phenolic plastic. Although higher priced, Dilecto boxes last for years, are little affected by many acids, are insoluble in ordinary solvents. They withstand heat, steam, water. Get the facts. Talk over your special materials handling problems with an expert . . . your C-D-F sales engineer.

DIAMOND FIBRE

ROVING CANS

Strong, tough, smooth. That's the industry reputation for C-D-F roving cans. Genuine Diamond Vulcanized Fibre body is finished inside and out with a moisture resistant synthetic enamel. Steel top rim is rust resistant plated, smooth, snugly fitted. From a sample can to carload full . . . with C-D-F you get smooth, seamless uniformity.

Write now for new folder showing complete C-D-F receptacles line!

ALL PRODUCTS OF

Continental-Diamond Fibre Company

NEWARK 11, DELAWARE

. . . with Textile Headquarters at 834 Haynes Street, Spartanburg, South Carolina. Call Spartanburg 3-6397 for DILECTO and DIAMOND FIBRE materials handling equipment . . . trucks, boxes . . . loom parts . . . top-speed shipments of CELORON silent gear blanks . . . friendly service from your C-D-F sales engineer.

Shorts and Remnants

(or King) For A Day. Whichever it is, it's a baby—a prize (we know), a

Customer for textiles!

textile customer today and for some 70 years to come, we hope. Don't cast any aspersions on young hopeful. She may be a muling and bawling infant (apology to Shakespeare), but just think a moment of that layette, and those dresses, sweaters, coats, undershirts (mercerized, too), socks, diapers, sheets, pillowcases, blankets, etc., etc. Her Majesty is a customer right now and a good one. Those things look small but watch her outgrow them. And watch her grow into a household and industrial textile customer. Any time you feel blue about textiles and the future of the industry, just look at Her Majesty and figure out over 3,000,000 —count 'em—coming along *every year* in the U. S. A. That's what the figures show. And we believe it's an institution that's here to stay.

► Some infants present problems. A friend with United Merchants, in addition to usual textile worries, had two mother cats who had kittens in the same box. Now 13 kittens don't know which mother is which. When either mama cat enters the box, she is mobbed—there aren't enough spigots to go around.

► And if King Cotton did not have enough problems already, what with neps, immature fibers, cheap cotton fabric imports, receding exports, and tar spots, we had to publish "Contaminated Cotton" and "Doughnut Cotton Fibers" in our June issue. Reader response was prompt and requests came for reprints. Editors could easily become morbid: when something bad or worrisome about cotton is published, everyone is interested. The dyer, the spinner, the weaver—they all want something to blame their troubles on, and good old cotton catches it. Just let us tell the story of how sweet and kind and gentle cotton is, and no one bothers to write us.

► We did, however, get a letter about a piece of equipment which was described in TI recently. One of our friends ran a check on the man who manufactures it and came up with the startling news that our government has quite a file on the fellow. This bit of sleuthing is appreciated because TI's new equipment editor rarely ever checks new equipment announcements with the FBI.

► We know now that S&R has a reader. Immediately after our offer in this column to forward TI to vacation addresses, this desk was flooded with a letter requesting just that. We aim to serve, but confidentially, if we had received 23,749 similar requests, then we should have had to read our own copy in the office and forego that trip to the beach.

► World News. Elizabeth made it in England. We were willing to bet it would come out that way. Looked like a sure thing. Just like the Yankees in the American League. And speaking of Yankees, a good AATCC friend at a recent chemists' outing put it right fast when he said, "They are coming down here—you don't see us moving up there, do you?" And that doesn't need to start another War Between the States. But we did have to go to New York to get a Rebel cap for a favorite "young 'un" and to a Jewish jeweler for our St. Christopher medal. Sounds mixed up like that nearby cotton mill which still keeps the name but wouldn't they be surprised if they came to work some day and found a bale of cotton on the doorstep. Probably would have all the chemists analyzing it to see what it was—might end up seeing if it would run on their machinery.

► There's a lot more in this issue about running machinery. So we'll sign off now and let you get at it. Remember, for the latest textile processing information, Keep Your Eye on TI (your good eye, that is).

automatically self-cleaning Amco atomizer, No. 6

Preferred for its improved micro-spray

AMCO Atomizers at Chicopee Manufacturing Company, Manchester, N. H.

AMCO NO. 6 ATOMIZER broadcasts a smoke-like micro-spray which is projected to a great distance, intimately mixing with room air. Engineered to operate *only* at its most efficient point, the No. 6 atomizer allows no compromise with the quality of the spray under any conditions.

AMCO NO. 6 ATOMIZERS are made to close tolerances; of metals with proved resistance to erosion, corrosion and mechanical wear. They are automatically self-cleaning with each cycle of operation . . . and are of such simple, well engineered design that servicing, if required, is easily performed.

AMCO NO. 6 ATOMIZER is actuated by a highly sensitive humidity control, a product of Amco's advanced engineering and 65 years of experience with humidification problems. This control reacts faster than anything previously obtainable. It means relative humidity held to the exact specified percentage hour after hour, day in and day out, under *every* condition.

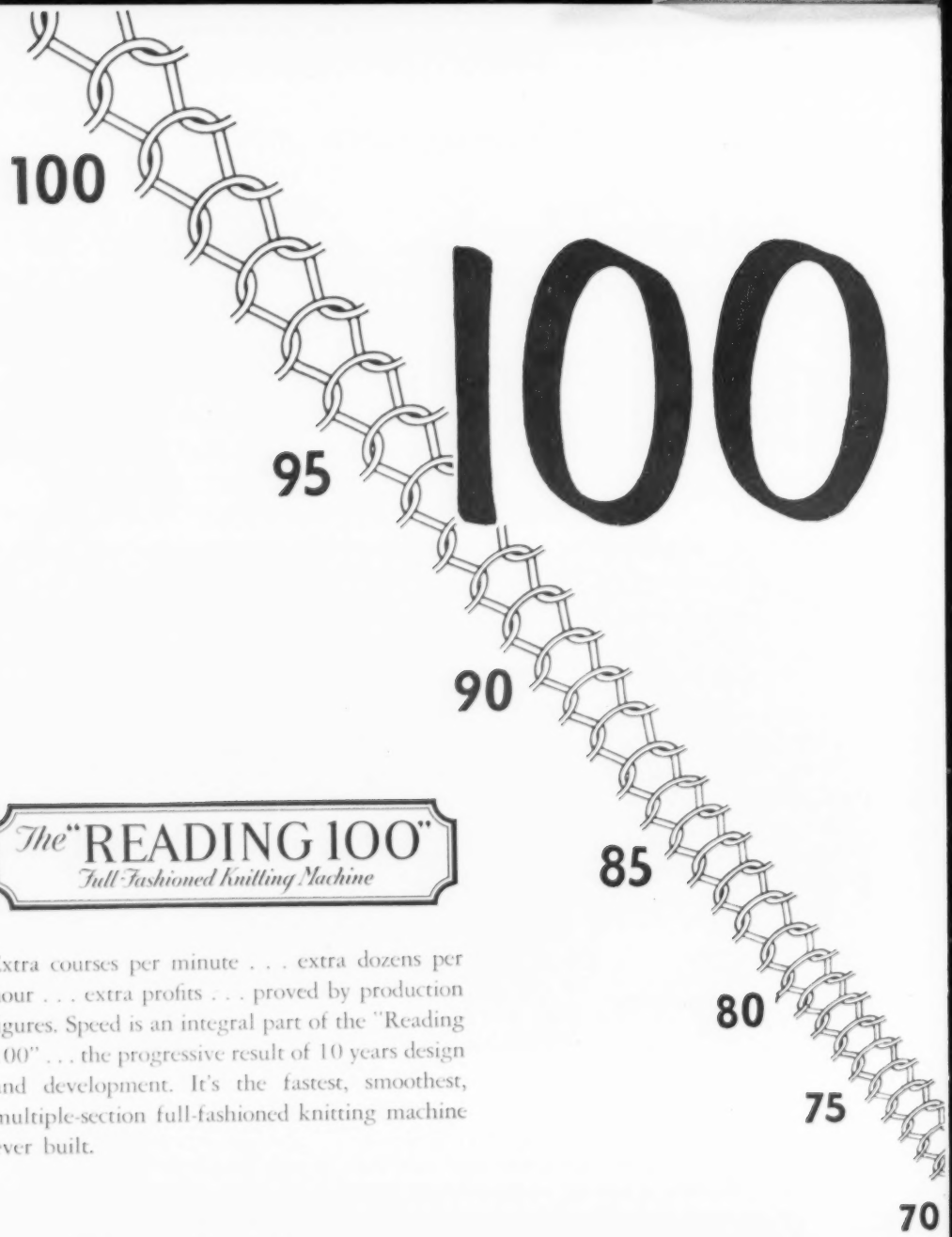
AMCO NO. 6 ATOMIZER can be used as original equipment or for replacement on all types of systems. Further details on request.

AMCO

AIR CONDITIONING SYSTEMS since 1888

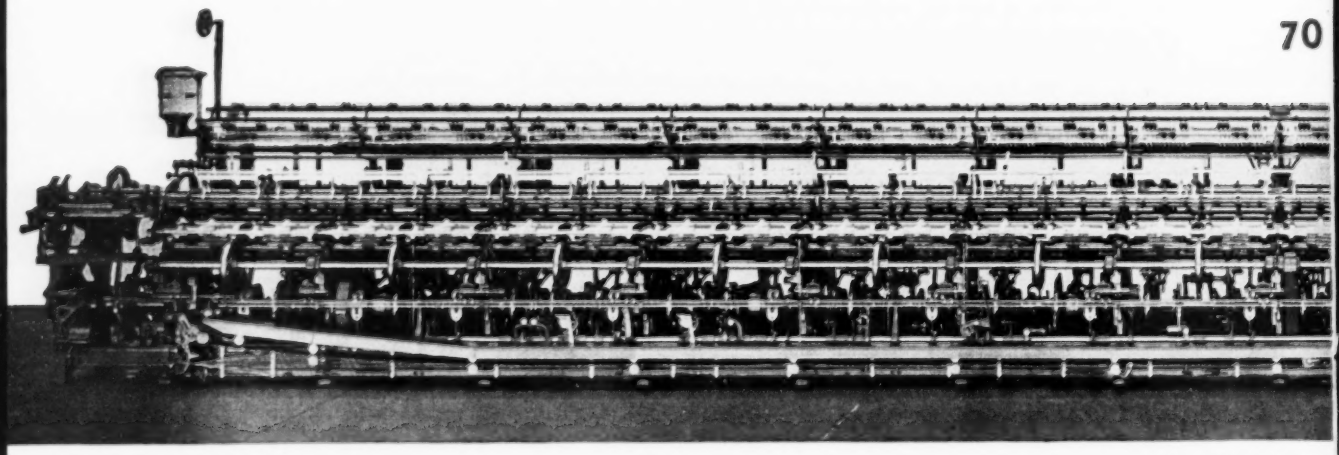
Humidification • Evaporative Cooling (Ductless or Central Station) • Refrigeration

AMERICAN MOISTENING COMPANY, PROVIDENCE, R. I. • ATLANTA • BOSTON • CAMDEN • CHARLOTTE • AFFILIATED WITH GRINNELL COMPANY, INC.



The "READING 100"
Full-Fashioned Knitting Machine

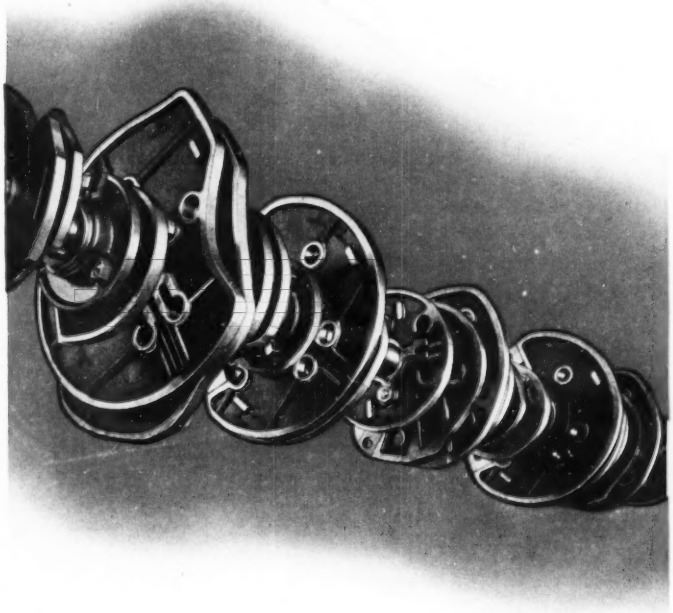
Extra courses per minute . . . extra dozens per hour . . . extra profits . . . proved by production figures. Speed is an integral part of the "Reading 100" . . . the progressive result of 10 years design and development. It's the fastest, smoothest, multiple-section full-fashioned knitting machine ever built.



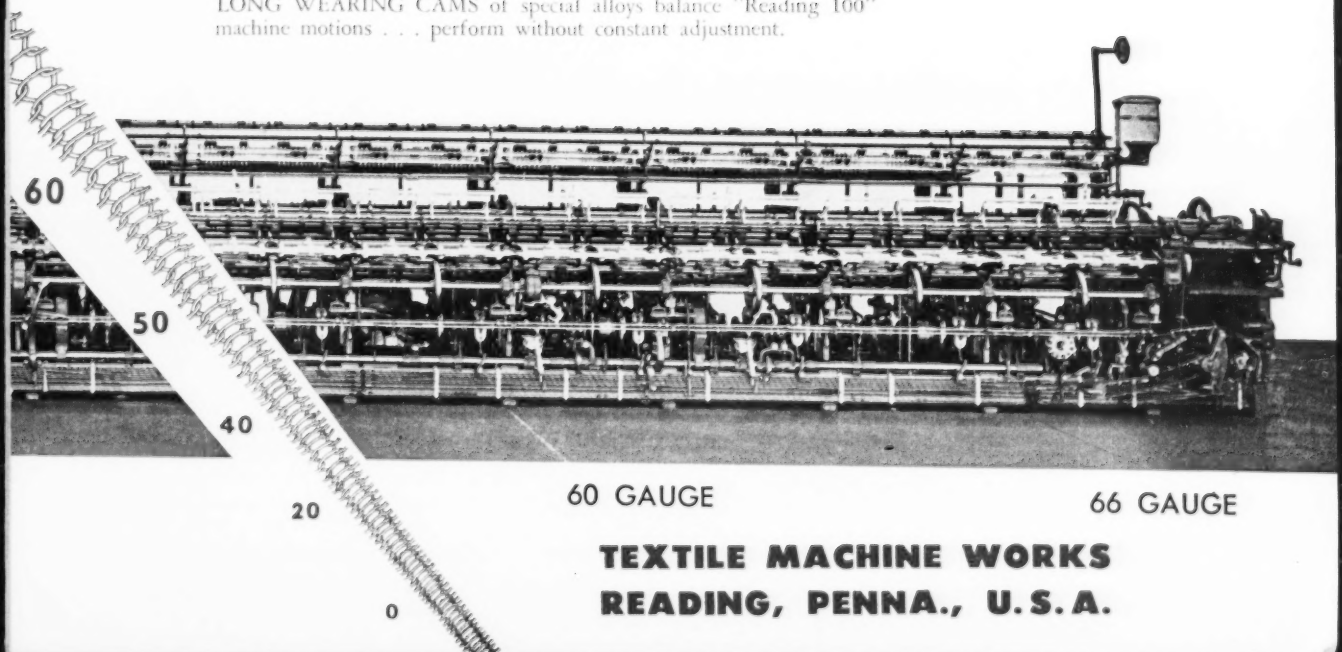
30 SECTIONS

51 GAUGE

courses per minute



LONG WEARING CAMS of special alloys balance "Reading 100" machine motions . . . perform without constant adjustment.

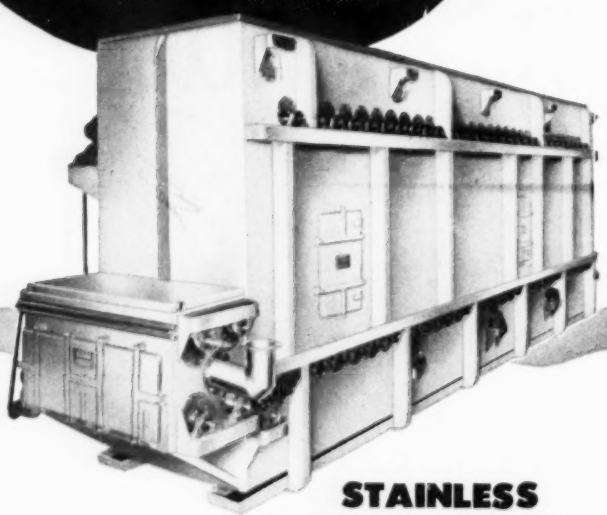


60 GAUGE

66 GAUGE

TEXTILE MACHINE WORKS
READING, PENNA., U.S.A.

INVESTIGATE
Tower
TEXTILE EQUIPMENT



STAINLESS
STEEL AGER

The cost conscious textile man, concerned with the purchase and operation of production equipment, will find it to his advantage to contact Tower engineers. Tower engineers will consult with you on the design and installation of the finest in textile equipment — to meet your most exacting operational requirements.

NEW FLASH AGERS
for vat prints are now being offered by Tower. We will be pleased to explain their many advantages.

Tower Iron Works
Established 1835
50 BORDEN STREET, PROVIDENCE 3, RHODE ISLAND

Shorts and Remnants

(Continued from page 6)

Training Seamers

"We would appreciate receiving five reprints of the article entitled 'Training Seamer Operators'. Mr. Boyer's article was indeed interestingly and informatively presented and should lead to much favorable comment by the trade."

JOHN F. HOPP
Project Engineer
Union Special Machine Co.
Chicago, Ill.

► Mr. Hopp, we blushingly admit that it has led to favorable comment and a bunch of inquiries for reprints. Some of those letters were quoted in June and July. Among those mills inquiring were:

Holeproof Hosiery Co.
Prim Hosiery, Inc.
Burlington Mills Corp.
Bear Brand Hosiery Co.
Alabama Hosiery Mills, Inc.
Mayfair Hosiery Co., Inc.
Classic Hosiery Mill, Inc.
Prestige, Inc.
Manchester Hosiery Mills
London Hosiery Mills Ltd.
Davenport Hosiery Mills, Inc.
Sandhurst Mills, Inc.
Perkasie Hosiery Co.
Skyland Hosiery Mills, Inc.
Pilgrim Full Fashioned Mills, Inc.
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Lee Hosiery Mill, Inc.
Julius Kayser & Co.
Van Raalte Co., Inc.
Chadbourn Hosiery Mills, Inc.
Fayetteville Knitting Mills, Inc.
Mojud Hosiery Co., Inc.
Fleetwood Hosiers
N. V. wed. J. Ahrend (Holland)
Wisteria Hosiery Mills
Pladmor Knitting Mills, Inc.

(Incidentally, Mr. Hopp, we are a colorful textile magazine, we know, but the address is *Peachtree St.*—not *Peacock St.*

Buck Creek Rebuilding after Cyclone

" . . . within the past year or two you had an article on a picker lap conveying system from picker room to card room. We are rebuilding our properties following a cyclone, and would appreciate reprints of this article if available."

FRED F. PHILLIPS
Pres. & Treas.
Buck Creek Cotton Mills
Siluria, Ala.

► Almost all sections of the country got a taste of the heaviest tornado and cyclone damage in our history this spring. A Senator from Indiana wants an investigation of the atom bomb tests, charging these have caused the storms. Regardless, we are sorry for victims of such storms. Any help from our reading and ad-

Which One...for Which Job?

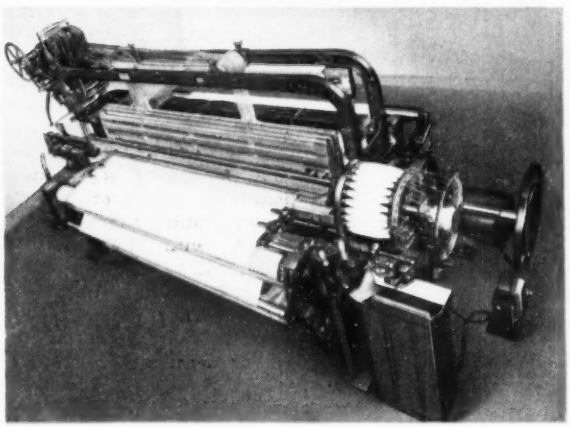
What are you shooting at? Single-color filling mixing fabrics? C&K has this type of loom, equipped with rotary magazines and head motions or end cams. Or do you have your sights set on something fancy in cotton, wool, synthetics or blends? C&K has a complete line of the most modern looms for these fabrics, too.

In fact, whatever you weave, C&K has the looms you need to produce the greatest amount of salable cloth at lowest cost per yard. These looms can be delivered promptly . . . installed in your weave room without special preparation or personnel . . . and quickly readied to run by your present weavers and loomfixers. So — "what are we waiting for"? *See C&K today about the looms you need right now.*

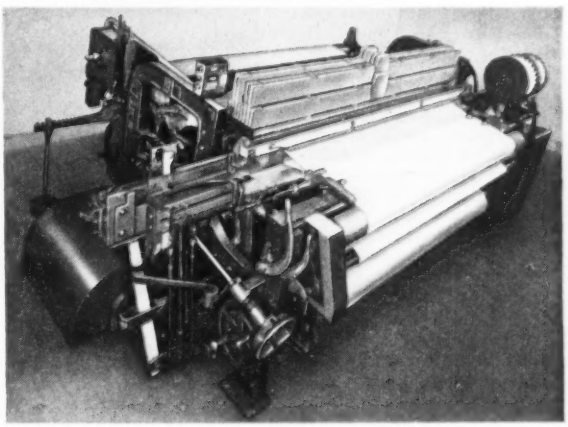
This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are WOVEN Fabrics.

CROMPTON & KNOWLES Loom Works
WORCESTER 1, MASSACHUSETTS, U. S. A.
Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

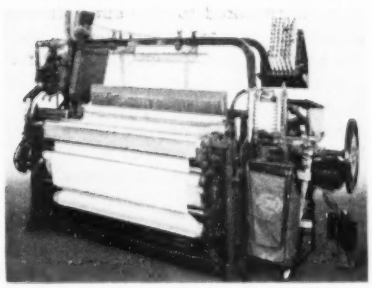
WORLD'S LONGEST LINE OF LOOMS...



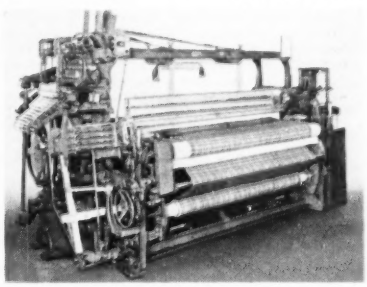
NEW SINGLE-PURPOSE C&K 2 x 1 BOX FILLING MIXING LOOM equipped with Rotary Magazine and *Head Motion* . . . one of the newest additions to C&K's *complete line* of performance-proved FM Looms.



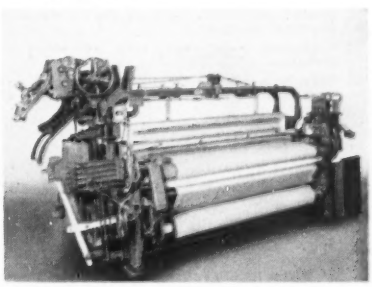
NEW SINGLE-PURPOSE C&K 2 x 1 BOX FILLING MIXING LOOM equipped with Rotary Magazine and *End Cam*. C&K also builds multi-purpose FM Looms with Call Box Feature (see W, C and S Looms below).



S LOOMS are the most modern machines for weaving nylons, rayons, acetates, combinations and pure silks. Built in all widths . . . call box . . . *filling mixing* . . . bobbin-changing . . . shuttle changing . . . many shuttle sizes . . . pick and pick . . . Jacquard . . . and what other features do you want?



C LOOMS for widest flexibility in weaving cottons, spun rayons and blends for towels, blankets, decorative fabrics, bedspreads, handkerchiefs, shirtings, suitings, dress goods. Built in all widths . . . bobbin-changing . . . shuttle changing . . . convertible . . . tri-color . . . pick and pick . . . leno motions . . . all-purpose take-up . . . 30" beams . . . and many more C&K-engineered advantages.



W LOOMS for unmatched versatility in weaving woolens, worsteds, upholstery and blended fabrics. Made in all widths . . . bobbin-changing . . . *filling mixing* . . . tri-color . . . convertible . . . pick and pick . . . and many other features.

CONSOLIDATED TEXTILE reports:

FIRES DUE TO TRAMP IRON ELIMINATED IN ROVING WASTE MACHINE CONVERTER

ERIEZ Permanent Magnetic Separators Remove ALL Tramp Iron From Waste Cotton

Two Eriez permanent (non-electric) plate-type magnetic separators, installed on the feeding line of a roving waste machine converter, are removing practically *all* spinning travelers and other tramp iron from re-workable waste cotton at the Consolidated Textile Co. Inc., Lynchburg, Va. During the three years prior to the installation of the Eriez equipment, *six* fires started in the waste machine from sparks generated by tramp iron striking against the machine's rotating beaters. These fires resulted in $1200 damage to the machine and materials. Since the Eriez installation there have been no fires caused by tramp iron, and the life of the beater lags has been materially increased!

Eriez permanent (non-electric) plate-type magnetic separators are the most economical and efficient means of removing stray iron and steel from *all* wet or dry fibers. They prevent the entry of tramp iron into openers, beaters, garnetts, cards and other expensive processing machinery . . . eliminate the possibility of steel striking sparks and setting destructive fires!

Here are 5 features exclusive with Eriez magnetic separators:

1. Riveted construction adds rigidity . . . increases structural strength.
2. Continuous hinge means easy, permanent installation.
3. Cover adds to longitudinal stiffness . . . prevents tampering and accumulation of iron on backs of castings with consequent shorting of magnetic circuit.
4. Insulation confines magnetic strength to working surface . . . no bleeding to surrounding areas.
5. Flush air gap prevents gathering of fine iron which can short out magnetic field.

Write today for FREE 6-page Bulletin 563 which describes all Eriez magnetic separator installations for the Textile Industry.

ERIEZ MANUFACTURING COMPANY

12 Magnet Drive • Erie, Pennsylvania

Nine Out of Ten Textile Mills Specify ERIEZ

Shorts and Remnants

vertising pages in rebuilding and repairing textile properties is freely extended.

Industrial Engineering

" . . . kindly send three reprints . . . 'Industrial Engineering for the Small Plant' . . . appeared in May 1949 issue."

WILLIAM E. JACKSON
Verney Corp.
West Peterborough, N. H.

► Supply of reprints exhausted. Suggest Bibliofilm Service.

Wool Resting

"Would it be possible to have more information about the wool resting process described in February?"

F. J. McQUILKIN
Collins & Aikman Corp.
Bristol, R. I.

► Yes, even wool gets tired—may be the heat or the competition. But Foxboro Co., Foxboro, Mass., can answer questions on the above.

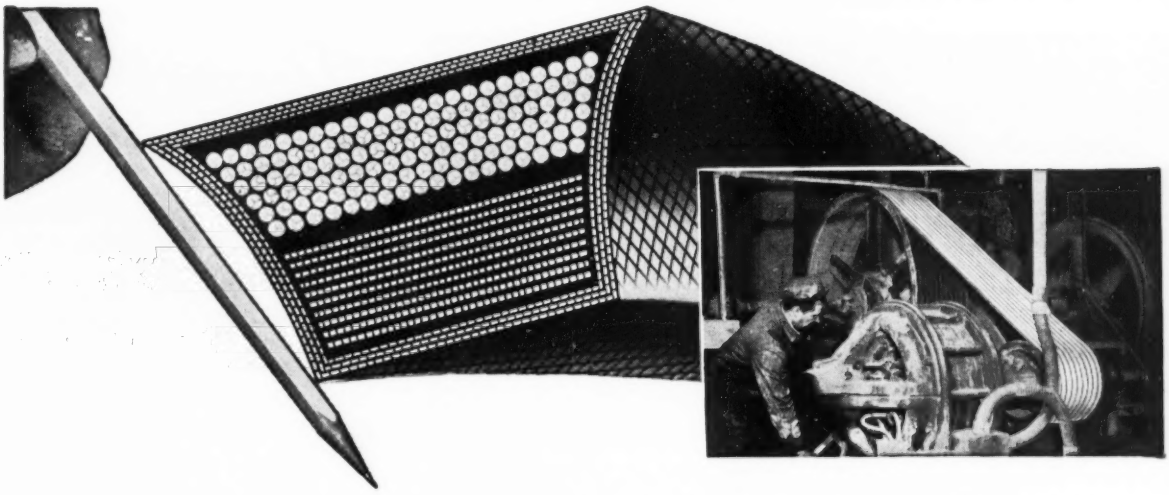
► Speaking of fiber competition, the rayon folks now have themselves a Rayon Information Center. If you have missed out on hearing about this, blame the advertising agency who did not know that TEXTILE INDUSTRIES has the largest and most responsive mill circulation in the U.S.A. and Canada of any textile publication. It reaches buyers in 91% of the weaving mills or departments in the U.S.A. with 99.6% of the looms, and in 82% of the knitting mills with 97% of all knitting machinery (Adv.). They missed us on the announcement spread advertising, but we're big hearted so we ran a news item on page 103 of June and here we are publicizing them again.

Favored!

" . . . our sales meeting . . . we peddlers were asked to give our opinions as to which magazines should have the accounts and which should suffer a reduction or be eliminated . . . It may probably be assumed that hereafter you will be one of the favored few—perhaps not exactly 'favored' because our company will surely get its money's worth."

NAME WITHHELD

► Amen, brother, and thank you. Ask the boys in the field. They know which publications can help them. TI appreciates their good will and hopes all advertisers will keep their salesmen informed on advertising.



Gates V-Belts are built with CONCAVE SIDES

(U.S. PATENT NO. 1813698)

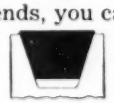
...that's why they last longer!

If you want lower V-Belt costs, just make this simple test...pick up *any* V-Belt and bend it as if it were going around a pulley.

As the belt bends, grip its sides between your fingers and thumb.

If the belt has *straight sides* you feel the sides bulge out. This forces the sides of the belt to press *unevenly* against the V-pulley . . . and you get concentrated wear at the points shown by the arrows.

Now, try this same test with the V-Belt that is built with CONCAVE SIDES **—the Gates Vulco Rope.**

As this belt bends, you can feel the CONCAVE SIDES *fill out* and become perfectly straight. 

These sides press *evenly* against the V-pulley. All wear is distributed *uniformly* across the full width of the Gates Vulco Rope and the CONCAVE SIDES therefore mean longer belt life and lower V-Belt costs for you.

When you buy V-Belts, be sure to get the V-Belt with the CONCAVE SIDES—the Gates Vulco Rope!

Gates Engineering Offices and Jobber Stocks are located in all industrial centers of the United States and in 71 foreign countries.

CS-935

V-Belts — Hose
Molded Rubber Goods
for industry
World's Largest Maker of V-Belts

Gates® VULCO ROPE DRIVES

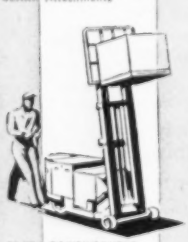
THE GATES RUBBER COMPANY • DENVER, U.S.A.

Hedrich-Blessing Photograph, courtesy of the EDWARD HINES LUMBER CO.

More people buy CLARK Gas Powered Trucks than any other make!

CLARK Electric Fork Trucks

CLARK Attachments



CLARK POWRWORKERS

THERE ARE A LOT OF GOOD TRUCKS on the market, and a lot of good arguments for each. But this fact remains: *more people buy CLARK gas powered trucks than any other make.* Since we produce *all* power types . . . gas, electric, diesel and L.P. gas . . . we feel we're in a good position to explain why:

CLARK Horsepower Is Capacity-Rated To Your Requirements —Why pay for excess horsepower that you'll never use? CLARK gives you five engines, rated according to truck capacity. You get plenty of power for the job, without a lot of gas-consuming excess. When you buy a CLARK in the size that's right for you, you get the proper horsepower, too.

CLARK Flexibility Meets Any Work Condition — A wide range of speeds and a constant source of power enables your gas powered CLARK to handle any work condition. Flexibility means 'round-the-clock performance of normal operations, with a built-in reserve of power for peak loads and emergencies. And for long hauls, you can't beat the speed and economy of the gas powered CLARK. . . . . .

No matter what your handling requirements are—there's a CLARK machine to do the job. Electric or gas powered fork trucks, POWRWORKER hand trucks, industrial towing tractors—they all give you quality-value for your money. That's why industry buys more CLARKS than any other make of truck. When you're in the market for materials-handling equipment, talk to your local CLARK dealer first. Most people do!

1903 1953
FIRST FIFTY YEARS
CLARK EQUIPMENT

CLARK ELECTRIC, GAS, DIESEL, L.P. GAS FORK TRUCKS
AND POWERED HAND TRUCKS · INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK MICHIGAN

Please send: ☐ Condensed Catalog ☐ Have Representative Call ☐ Driver Training Movie

Name_____

Firm Name_____

Street_____

City_____ Zone_____ State_____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

Personal NOTES

ABOUT MEN YOU KNOW

New head of the New York section of the American Association of Textile Chemists and Colorists is **W. G. Helmus,** manager of Fair Lawn (N. J.) Finishing Co.

M. L. Rogers, 71, has retired from the Efird division of American & Efird Mills, Inc. He is succeeded as superintendent and plant manager by his son, **W. Wells Rogers,** who has been with the division for 11 years. Other changes at Efird are: **Crawford Talbert,** general foreman of spinning at plants 1, 2, and 3; **William B. Furr,** assistant superintendent of these plants; **Lloyd A. Davis,** third shift foreman; **Troy E. Hill,** general foreman of spinning at plants 4 and 5; **Edward Viehman,** assistant superintendent of these plants; and **Conley Robinson,** general foreman of carding.

The National Cotton Council has announced the appointment of **Ernest Stewart,** public relations manager, to the post of general manager of sales promotion and public relations in charge of the organization's New York office. **W. L. Foreman** has succeeded Mr. Stewart in the Memphis office; and **R. T. Alexander** has been transferred to New York where he will serve jointly in merchandising and foreign promotion relations. **John Jungkind** has been added to the Council's public relations staff, and will work primarily in the field of production and marketing.

J. Spencer Love, chairman of the board of Burlington Mills Corp., recently received from the University of North Carolina an honorary degree as doctor of laws.

I. Rogosin recently resigned as president of Beaunit Mills, Inc., and its subsidiaries and has been elected chairman of the board of each company. Succeeding him is **Lionel Rogosin,** who has been with Beaunit since 1947 and a vice-president since 1951. **H. W. Springorum** is now president of North American Rayon Corp. and Skenandoa Rayon Corp., two subsidiaries, and vice-president of Beaunit Mills.

Callaway Mills Co. has promoted **James L. Catchings** to assistant superintendent of its Unity Spinning plant.

New Textile Dyeing Reagent

IT WILL PAY YOU TO TRY STERLING TNA·5*

STERLING TNA-5 has been especially developed for textile dyeing to economically and efficiently produce better shades and finish.

TNA·5 is an efficient and economical replacement, pound for pound, for anhydrous sodium sulphate in a neutral dye bath.

TNA·5 is neutral, readily soluble in either cold or hot water.

TNA·5 eliminates dye precipitation, produces a good color yield, level shades and a soft finish.

TNA·5 can be used in a neutral dye bath when dyeing cotton, rayon or wool or any blend of these fibers, in the staple or piece goods.

TNA·5 can be used either in the dry fine granular form or automatically converted to fully saturated brine with the TNA-5 Dissolver.

TNA·5 is especially effective with Direct and Naphthol Dyes, it produces excellent crock fastness and clear brilliant colors.

STERLING TNA·5 Trademark

Available in 100-lb. bags and bulk

INDUSTRIAL DIVISION
INTERNATIONAL SALT CO., INC., SCRANTON, PA.

SALES OFFICES

Atlanta, Ga. • Chicago, Ill. • New Orleans, La. • Baltimore, Md. • Boston, Mass. • St. Louis, Mo. • Newark, N. J. • Buffalo, N. Y. • New York, N. Y. • Cincinnati, O. • Cleveland, O. • Philadelphia, Pa. • Pittsburgh, Pa. Richmond, Va.

ENGINEERING OFFICES

Atlanta, Ga. • Chicago, Ill. • Buffalo, N. Y.

ORDER YOUR TNA-5 TODAY!

Or, if you want more information, send in this coupon!

*Trademark

INDUSTRIAL DIVISION
INTERNATIONAL SALT COMPANY, INC., SCRANTON 2, PA.

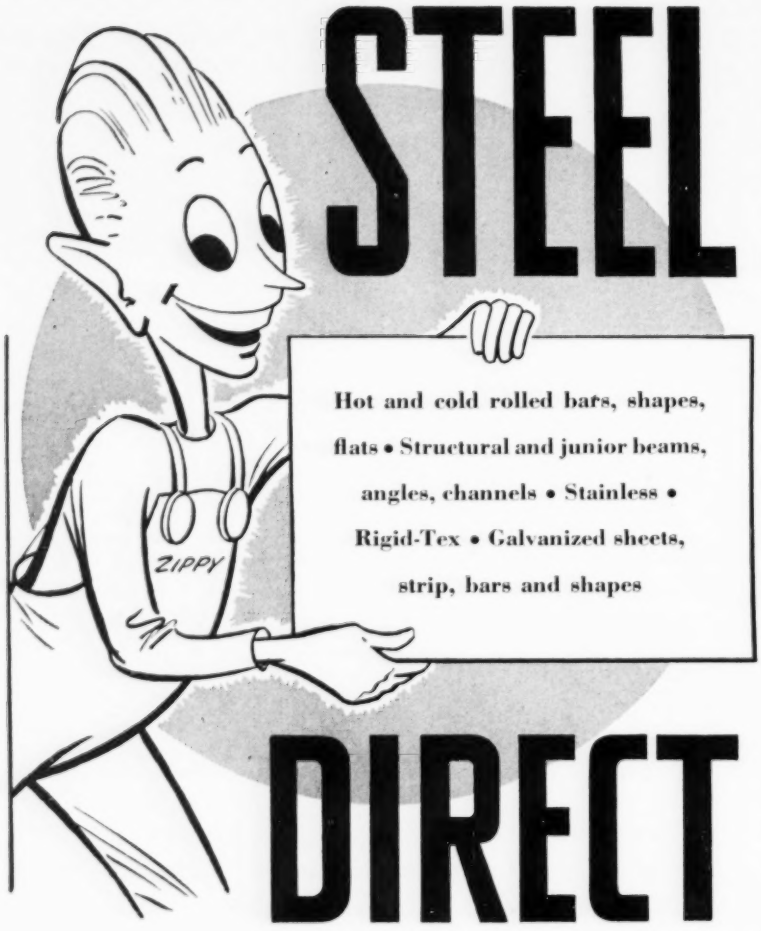
☐ Please have a representative call.
☐ Please send additional information.

*Name*_____

*Company*_____

*Address*_____

*City*_____ *Zone*____ *State*_____


STEEL
Hot and cold rolled bars, shapes, flats • Structural and junior beams, angles, channels • Stainless • Rigid-Tex • Galvanized sheets, strip, bars and shapes
ZIPPY
DIRECT

From Warehouse to you!

Now—from the South's newest and most modern steel warehouse—a larger-than-ever variety of ferrous and non-ferrous products is within reach of your telephone or overnight mail—ready for rapid delivery by rail or truck to any point in the Southeast.

METALLURGICAL SERVICE

Without cost or obligation, the services of our complete testing laboratory and metallurgists are available to help you choose correct metals, find suitable substitutes when necessary and advise on the use of stainless, alloy, high and low carbon steels.

To receive our stock lists as issued, drop us a line or give us a ring.

"Service in Step with Southern Progress"

WAREHOUSE DIVISION

Atlantic Steel Company

575 FOURTEENTH ST., N.W. • EMERSON 3451 • ATLANTA GEORGIA

Personal NOTES ABOUT MEN YOU KNOW

Jack Market is now overseer of the card room, Plant No. 1; **Nathan H. Gross,** assistant overseer of carding, spinning, winding, twisting, and packing, Plant No. 2.

Formerly with the now liquidated Geneva Mill of the Wanskuck Co., **Warren W. Butterworth** is now overseer of carding at the Cascade Woolen Mills, Oakland, Maine.

Dr. Charles H. Fisher, director of the Southern Regional Research Laboratory, U. S. Department of Agriculture, was recently awarded the hon-

Dr. Fisher

orary degree of doctor of science by Tulane University. He was honored for his accomplishments as a teacher, research chemist, and administrator of research.

George H. Lanier, Jr., president of Lanier Textile Co., Inc., and vice-president of Wehadkee Yarn Mills, and **George W. Walker,** head of Neuss Hesslein & Co., were recently elected to the advisory board, Textile Office, Chemical Bank & Trust Co.

Herman Cone, president of Cone Mills Corp., has been awarded the honorary degree of doctor of textile science by North Carolina State College.

Recently elected to membership in the Controllers Institute of America were: **Carl C. Buchanan,** Texas Textile Mills; **W. Wesley Jones** and **Winthrop W. Smith,** both of Mount Vernon-Woodberry Mills, Inc.

Carleton Prescott has left Newmarket Manufacturing Co. to become associated with Duffen Dye Works, Portsmouth, Va.

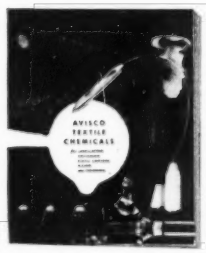
W. H. Muse, assistant manager, has retired after being with Erwin Mills, Inc., since 1926.

Norman F. Young recently joined Fieldcrest Mills as a special projects

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N.Y. AUGUST, 1953

New Technical Data Book Describes Proper Use of Avisco Textile Chemicals



As a service to the textile industry, American Viscose has just published a useful new 40-page, illustrated book, "Avisco Textile Chemicals." The book is designed to present tried and proved methods that will give standardized, practical mill procedures for obtaining end products of uniformly predictable quality. It applies to both natural and man-made fibers.

There is a full description of the uses of non-ionic waxes and other lubricants, as well as softening and anti-static agents developed by Avisco's Textile Research Department at Marcus Hook, Pa., in conjunction with the Atlas Powder Company. Extended tests provided the data.

FIBER PREPARATION

Chapter I explains the formulating of chemicals for preparation of fibers, to provide the desired lubrication, softening, and static control. It deals with cotton fibers, wool fibers on both systems, and man-made fibers.

YARN PREPARATION

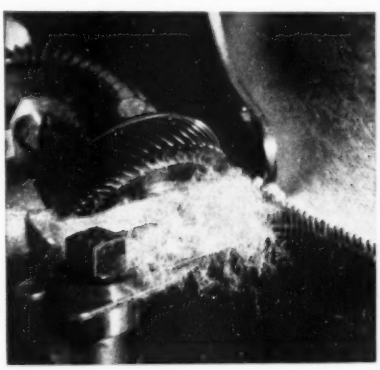
Chapter II covers preparation of yarns for knitting, weaving, and braiding, as well as the preparation of sewing threads. Emphasis is given to scoured and dyed yarns and their need for proper lubrication and sizing.

DYEING AND FINISHING

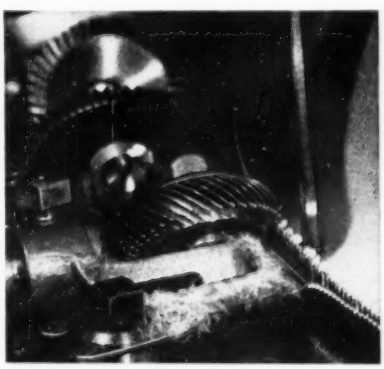
How the proper lubricants, softeners, and static-control agents are best applied during dyeing and finishing of fibers, yarns, and fabrics is the subject of Chapter III.

There is a detailed discussion of the Avcoset Process for stabilizing rayon and rayon blended fabrics, including proper methods of preparing and applying the Avcoset finishing solutions. Copies of the book are available on request.

How properly treated yarns cut fly waste



Non-lubricated yarn accumulates excessive fly during knitting; requires frequent costly machine stops for cleaning.



Yarn lubricated with Avcodisk synthetic lubricant during coning or winding greatly reduces fly. Cleaning time is cut up to 50%.

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers
RAYON ACETATE VINYON* FILATEX®

Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.

*TMC & CCC

Personal NOTES ABOUT MEN YOU KNOW

engineer in the research and quality control department. **Derrek S. Archer** was appointed master mechanic of the finishing mill and bleachery.

Arthur J. Gibbs, purchasing agent, recently celebrated his fiftieth year of service with the Fulton Bag & Cotton Mills, Atlanta, Ga.

Two North Carolinians have been appointed to serve as members of the Personnel Policies Forum, an industrial relations project conducted by the Bureau of National Affairs in Washington. They are **S. Paul Meadows,** personnel director of Hanes Dye and Finishing Co., and **W. G. Alligood,** personnel director of the American and Efird Mills Co.

Elmer L. Ward, president, Goodall-Sanford, Inc., Sanford, Maine, received the honorary degree of doctor of textiles at Philadelphia Textile Institute's recent commencement exercises.

Ronald R. Menti, previously supervisor of employee relations, is now assistant to the executive vice-president of United States Rubber Co. **Chester J. Noonan** was made vice-president and general manager of the footwear and general products division, succeeding Walter H. Norton, retired. In the textile division of the company, new branch offices were

Mr. Sullivan

opened in Philadelphia and Atlanta. **W. O. Jelleme** has been placed in charge of market research on industrial fabrics; **R. A. All** is assistant to the merchandise manager; **J. A. Arrouet** is responsible for basic fabric and product development; **J. E. Sullivan,** manager of industrial relations and labor standards, with **W. Lindsay Wylie** as his assistant; and **A. G. Quattlebaum,** office manager for the production management section of the division. The last three named men will have their headquarters in the production management section of the textile division, which is being moved to Winnsboro, S. C.

Anchor Rome Mills, Rome, Ga., has announced the promotion of **Robert E. Coleman** to assistant superintendent.

C. Eugene Rowe has resigned as treasurer of Burlington Mills Corp. He has been with the firm for 18 years.

L. M. Allison has succeeded John D. Rollins, resigned, as general manager of Goldtex Fabrics Corp., Rock Hill, S. C.

Charles Tumminello, previously with Sanco Piece Dye Works, is now vice-president of Haledon Novelty Printers, Inc.

The Kappa Tau Beta "Man of the Year" award at North Carolina State College was presented this year to **P. Huber Hanes, Jr.,** executive vice-president of P. H. Hanes Knitting Co.

Herbert C. House, formerly presi-

NON-FLUID OIL
TRADE MARK REGISTERED

The Long Lasting Lubricant

NON-FLUID OIL is the made-to-order, long lasting lubricant that stays *in* bearings and *off* yarn while ordinary oil escapes from bearings, blackens yarn and rots leather or cork cots.

Today, 7 out of 10 mills use NON-FLUID OIL for top and bottom rolls and saddles of Long Draft frames. The result; they get greater production of clean yarn at lower lubricant cost because NON-FLUID OIL gives longer and better lubrication and does not drip or spatter.

For proof of the performance of NON-FLUID OIL, write for Bulletin T-13 and free testing sample for a convincing demonstration.

NEW YORK & NEW JERSEY LUBRICANT COMPANY
292 MADISON AVE., NEW YORK 17, N. Y.
WORKS, NEWARK, N. J.

Southern District Manager: Lewis W. Thomason, Jr.
Charlotte, N. C.

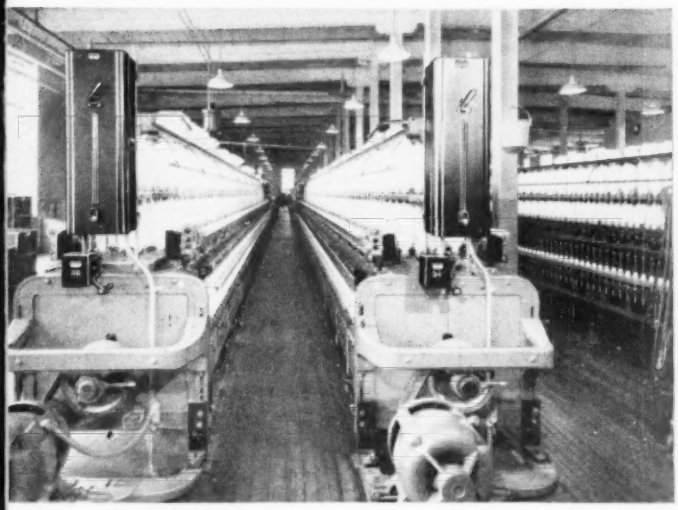
WAREHOUSES

Atlanta, Ga.	Detroit, Mich.
Birmingham, Ala.	Greensboro, N.C.
Charlotte, N.C.	Greenville, S.C.
Chicago, Ill.	Providence, R.I.
Columbus, Ga.	St. Louis, Mo.

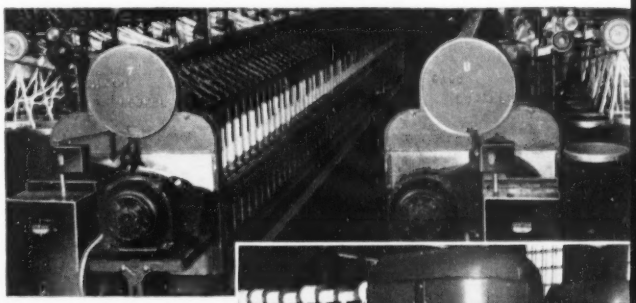
NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture.

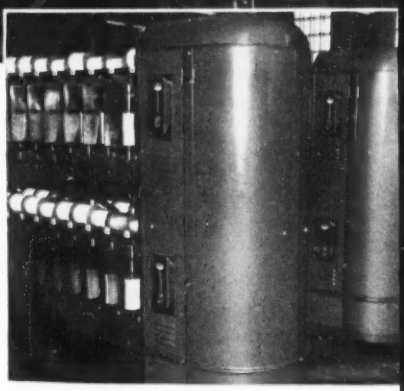
CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY



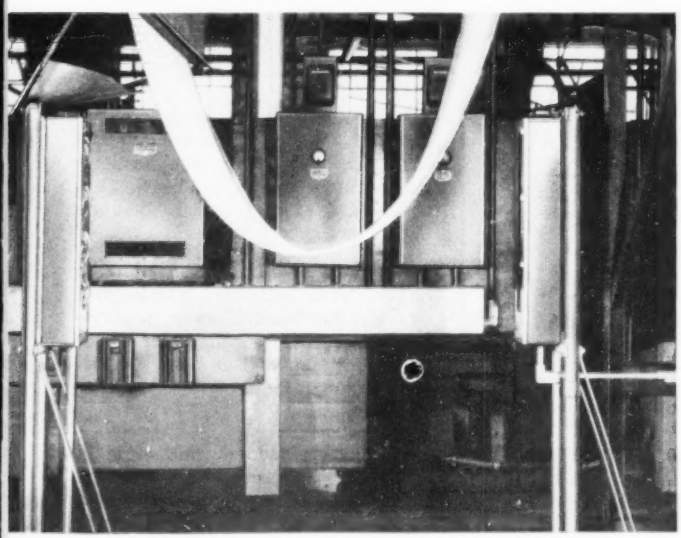
at STATESVILLE. Cutler-Hammer Combination Starters and Shipper Rod Switches on spinning frames in STATESVILLE DIVISION, The Seminole Mills, Statesville, N. C.





for WAUMBEC

at Manchester, N. H. Cutler-Hammer Pushbutton Manual Starters on uptwisters and Primary Resistor Type Magnetic Starters on roving frames. Cutler-Hammer control also used on looms and spinning frames in this great mill.



at MOORESVILLE. Cutler-Hammer Electronic Dancer Roll Regulator and Range Drive Controller on slack drying range at Mooresville Mills, Mooresville, N. C.

Too important to be left to chance

Men who *know* textile production costs are careful buyers of motor control equipment. They know a single work stoppage caused by faulty control can easily cost more than the entire purchase price of the control. In consequence, they do two things. First, they compare *all* makes of motor control to determine which is most dependable. Second, they specify this make by *name* on every purchase order.

Cutler-Hammer Motor Control is the natural choice of men who know dependability in motor control is too important to be left to chance. They quickly find Cutler-Hammer dependability is not a mere competitive claim but a *fact* that can stand out clearly in a mill's production records to reflect favorably on their own ability and good judgment. They also find that Cutler-Hammer dependability is not an occasional happenstance... that it is the earned advantage of the longest and most intensive specialization in motor control engineering... that it can safeguard *every* control need from the simplest starter to the most complex electronic equipment.

You too will find it pays to insist on Cutler-Hammer Motor Control and refuse all substitutes. An adequate network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. CUTLER-HAMMER, Inc., 1456 St. Paul Avenue, Milwaukee 1, Wisconsin.

NEW CUTLER-HAMMER LOOM SWITCH

with NEMA 1A Lint-Tight Gasketed Enclosure

Pushbutton operation—an achievement for this type of starter. Stop button can be padlocked.

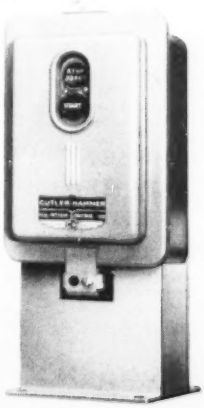
Stronger, smaller, drawn steel case. Unique welded-steel mounting pedestal available to create a *complete* assembly with unparalleled resistance to mechanical shock.

New NEMA 1A lint-tight gasketed enclosure prevents entrance of lint and dust.

Service proven, positive make, quick break operating mechanism built on *steel* framework.

"Out in the open" contacts for quicker inspection and easy renewal *on the job*. Most dependable overload protection—famous Cutler-Hammer eutectic element type—prevents unnecessary shutdowns without sacrifice of *positive* motor protection.

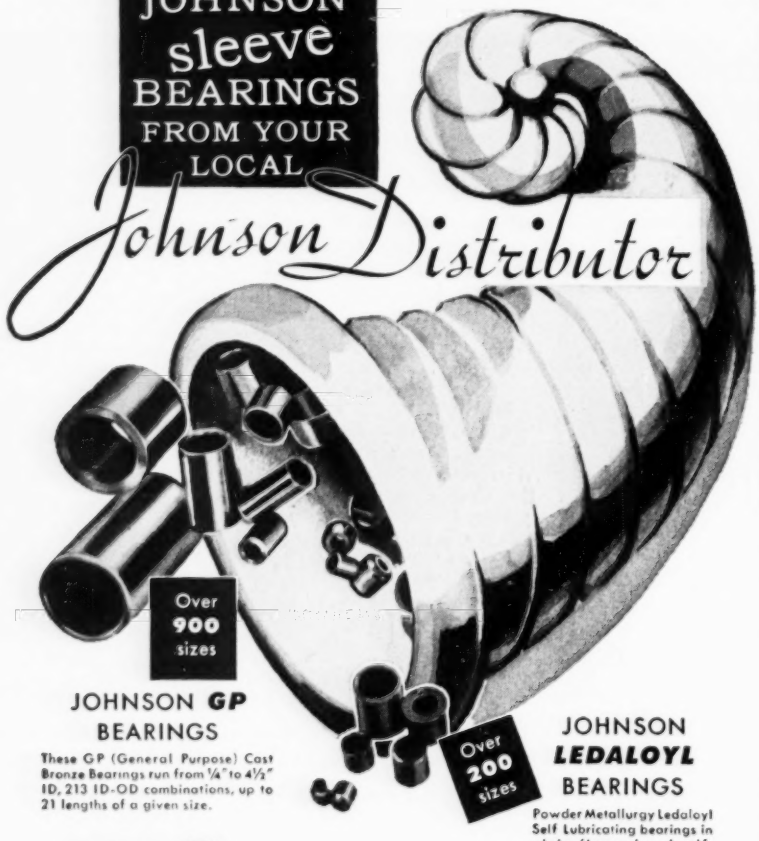
Vibration resistant. Mechanism "floats" in truly effective *live rubber* mounting bushings.



CUTLER-HAMMER
MOTOR CONTROL
C-H

STANDARD STOCK SIZE JOHNSON sleeve BEARINGS FROM YOUR LOCAL

Johnson Distributor



Over 900 sizes

JOHNSON GP BEARINGS

These GP (General Purpose) Cast Bronze Bearings run from 1/4" to 4 1/2" ID, 213 ID-OD combinations, up to 21 lengths of a given size.

Over 200 sizes

JOHNSON LEDALOYL BEARINGS

Powder Metallurgy Ledaloyl Self Lubricating bearings in plain, flanged and self-aligning types.

JOHNSON EM BEARINGS

Electric Motor EM Bearings are available for all popular motors. Equal to or better than original bearings.

Over 340 bearings

JOHNSON UNIVERSAL BRONZE BARS

Cored, solid and hexagon bars, 13 inches long. All except hexagon bars completely machined ID, OD and ends.

Over 400 sizes

JOHNSON JB BEARINGS Sleeve-Type

JOHNSON

BABBITT METAL

Tin base and lead-base Babbitt in 7 pound bars.

Over 200 sizes

JOHNSON GRAPHITED BEARINGS

Cast Bronze Graphited Bearings provide 40 to 45% graphite contact with shaft, for applications difficult to lubricate, or where ordinary lubricants may damage goods in process.

Write for catalog

JOHNSON BRONZE COMPANY • • • 530 South Mill St., New Castle, Pa.

Personal NOTES ABOUT MEN YOU KNOW

dent, is now chairman of the board of Charles W. House & Sons, Unionville, Conn; **Raymond K. Brooks** succeeds Mr. House as president; **J. Gordon Brash** is secretary and vice-president; and **Allen C. House** and **R. King Brooks, Jr.,** are now on the board of directors.

Edward P. Ix has succeeded his brother, the late Alexander F. Ix, as president and treasurer of Frank Ix & Sons.

Richard L. Hearn of Atlanta, Ga., has accepted a position as textile engineer in the Newport, Del., laboratory of the Textile Fibers Department of E. I. du Pont de Nemours & Co., Inc. Mr. Hearn was formerly an instructor in the A. French Textile School at the Georgia Institute of Technology.

Mr. Hearn

At the annual convention of Delta Kappa Phi, national textile fraternity, **A. Ward France** was re-elected supreme consul. Mr. France is head of the wool and worsted departments of the Philadelphia Textile Institute.

Executive personnel, mill officials, and sales representatives from all sections of the country were present at the 70th birthday party honoring **Leon Lowenstein,** chairman of the board of M. Lowenstein & Sons, Inc. One interesting phase of the party was a series of wire recordings from each of the company's mills, sent to mill headquarters where they were pieced together and brought to New York for Mr. Lowenstein.

Recipients of honorary degrees at Lowell Textile Institute this year were: **Dr. Frederick M. Weiker,** former dean of the school of engineering at George Washington University and noted textile education consultant; **Jewett T. Flagg,** president of the Flagg-Utica Corp.; **Julian S. Jacobs,** editor of the "Textile Research

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TWITCHELL® OILS

They're Balanced!

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Faster production through

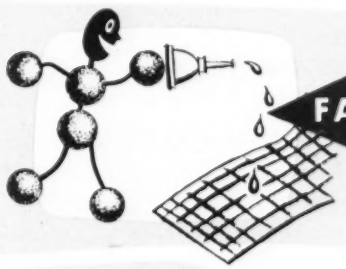
FAST REWETTING

Twitchell Oils assure maximum throughput per range because fabrics wet back rapidly and uniformly—particularly important for even shrinkage at high processing speeds. And, Twitchell Oils retain full effectiveness even when fabrics are stored for long periods.

Faster production through

BETTER FIBER LUBRICATION

Fibers "adjust" easily, "slide" readily because Twitchell Oils impart superior lubricity. Speed-slowing, troublesome sticking at the shoes is avoided. Rejects or reruns due to fabric distortion are minimized... thus further assuring maximum production per range.



FASTER

BETTER

Better Sanforized fabrics through

FREEDOM FROM STAINING

Fabrics smell better—look better to the buyer because of the high stability of Twitchell Oils. Oxidation and rancidity are avoided. Treated fabrics possess maximum resistance to yellowing or staining with age... remain fresh and appealing longer.

Better Sanforized fabrics through

SOFTER HAND

Twitchell Oils give you the hand you want—the hand that appeals to buyers. This fourth property of softness permits a reduction in softening agents normally used. In many cases, maximum savings are achieved through complete elimination of other softeners.

BETTER

ORDER ENOUGH FOR A PLANT RUN, OR WRITE FOR FURTHER DETAILS!

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Fatty Acids & Derivatives
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Twitchell Oils, Emulsifiers

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Please send me a copy of "Twitchell Oils for Cotton Finishing"

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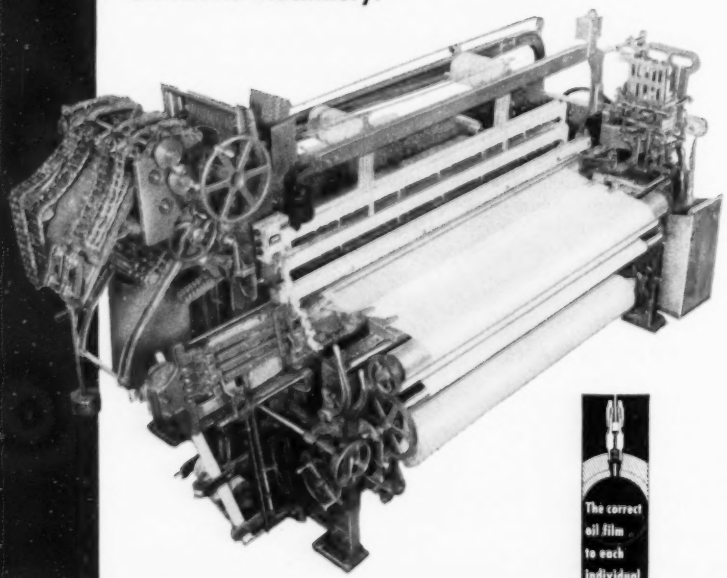
Protect your Investment with BIJUR

The Crompton & Knowles W-3 Loom, for weaving woolens, worsted and blended fabrics, with Bijur Automatic Lubrication *reduces labor and maintenance costs . . . minimizes fabric spoilage . . . protects your investment.*

The Bijur System lubricates 34 bearings with the *correctly proportioned* amount of oil while the loom is operating. Bijur guards the bearings in the inaccessible areas and protects them against failure from neglect.

For longer machine life, low maintenance and increased production, specify Bijur lubrication on all new mill equipment you buy. A Bijur engineer can solve your lubricating problems on all textile machinery.



N-6

281

BIJUR LUBRICATING CORPORATION

Rochelle Park • New Jersey

Personal NOTES ABOUT MEN YOU KNOW

Journal;" and **G. Gordon Osborne,** president of Warwick Mills.

Clayton Broadhurst is now second hand of dyeing at Maplewood Yarn Mills, Fall River, Mass. He was previously with the now liquidated Kerr Mills of American Thread Co.

Ralph Tanner was recently elected vice-president and director of Mooresville Mills. New treasurer is **William W. Rader.** Other changes are: **Frank Poor,** previously with Textron Inc. and Dan River Mills, head of the warping, winding, quilling, and twisting departments.

J. B. Goldberg, previously research director of J. P. Stevens and Co., Inc., has opened offices at 11 West 42nd Street, New York City, to provide technical consulting services to

Mr. Goldberg

the textile and allied industries. "Textracts," a summary of domestic and foreign textile news and technology, is being prepared and published monthly by Mr. Goldberg.

Charles Pozzi has succeeded Allan Taylor as superintendent of U. S. Finishing Co.'s Sterling, Conn., plant. Mr. Taylor is now with Robbins Mills.

Formerly with United Merchants & Manufacturers, Inc., **Irwin J. Gusman** is now vice-president of J. P. Schwebel & Co., weaver of industrial glass fabrics.

William H. Grier, vice-president and general manager of Rock Hill Printing & Finishing Co., was recently elected to the board of trustees of Winthrop College.

New president of the Rhode Island Textile Association is **Frederick A. Cornell,** resident manager of Collins & Aikman Corp. plants in Bristol, R. I. **Raymond Curtis,** Kenyon Piece Dye Works, Inc., succeeds Mr. Cornell as vice-president.

R. P. Wilson, production depart-

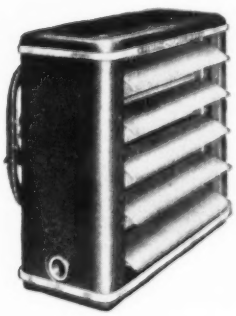
WHY WAIT 'TIL WINTER TO SOLVE THAT HEATING PROBLEM?

• The scene at right may be somewhat exaggerated. Still, why take a chance on chilly working areas in your plant next Winter? Actually, now is the ideal time to look into the question of adequate heating—to be sure of the best production conditions and employee relations.

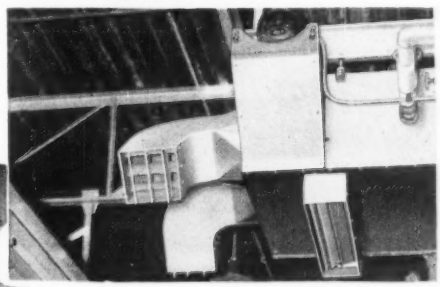
"Buffalo" UNIT HEATERS

There is a size and type of "Buffalo" Unit Heater to give you low-cost service for many trouble-free years. They're all quality-built units—with efficient, non-corrosive copper finished elements for maximum radiation, and quiet, high-delivery "Buffalo" Fans for positive heat throw.

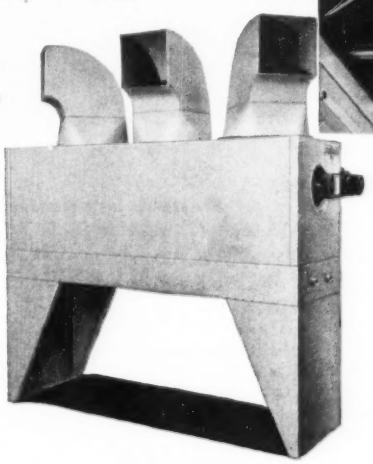
HEATING SMALL AREAS



Allows you to "spot" heat *where* you need it. Operates on as little as 2 lbs. steam, and is available in 20 sizes. Low-cost, easy to install.



"Buffalo" Breezo Fin



FOR HEATING LARGE FLOOR AREAS—"Buffalo" HIGHBOY

Designed for simple installation with readily adjustable outlets for louvers or duct connections. This unit equipped with by-pass damper.

HEAT ENTIRE ROOM WITH NO LOSS OF FLOOR SPACE USING "Buffalo" LOWBOY

Provides fresh, filtered air. With window installation, unit supplies makeup air for plants using large-capacity exhaust systems. Has "Buffalo" Mixed flow fans on hollow shaft.

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Write today for full information.

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VENTILATING FORCED DRAFT | AIR CLEANING COOLING | AIR TEMPERING HEATING | INDUCED DRAFT PRESSURE BLOWING | EXHAUSTING

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Manufacturers of

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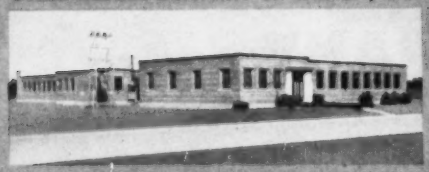

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STEHEDCO and SOUTHERN Products
"Weave the World's Needs"

1-O-IX

Personal NOTES ABOUT MEN YOU KNOW

ment manager, has been promoted to general superintendent of the Sheraton Mills Corp. **W. B. Croston** has resigned as general manager of the Cornelius plant.

Ralph Hutcheson has left Whitin Machine Works to become superintendent of yarn manufacturing at Clearbrook (Va.) Woolen Co.

Obituaries

Frank J. Boynton, 56, manager of the full-fashioned hosiery division of Chadbourn Hosiery Mills, Inc.

Donald W. Bridgman, 67, vice-president of Foster Machine Co.

R. P. M. Eagles, 80, Cone Mills Inc.

George H. Fisher, 55, Cone Mills Inc.

Thomas A. Grieve, 68, retired agent of Wyandotte Worsted Mill.

Edward P. LeVeen, 73, president and founder of Carleton Woolen Mills.

Robert Marshall, 74, president of Marshall & Williams Manufacturing Co. before his retirement in 1946.

Howard W. Matthews, 55, vice-president of Turbo Machine Co.

Ivar L. Sjostrom, 85, president of Lawrence (Mass.) Dye Works before his retirement.

Robert F. White, 80, representative of Pearce Woolen Manufacturing Co., Latrobe, Pa., and Woolrich Manufacturing Co., Woolrich, Pa.

Ferdinand Sonneborn, 79, president of L. Sonneborn Sons, Inc.

F. A. Williams, 72, vice-president of Cannon Mills Co.

Honor Graduates at Georgia Tech

Ernest N. Young, Jr. of East Point, Ga., was selected as the outstanding graduate of the class of 1953 at the A. French Textile School of the Georgia Institute of Technology in Atlanta. Basis for this selection each year is scholastic achievement throughout the student's course, participation in extra-curricular activities, service to the school, and other personal qualities.

In the left photo above, Mr. Young (center) is congratulated by **Herman A. Dickert,** director of the School, while **Gerald B. Fletcher,** head of the weaving department, fastens a bronze strip bearing Mr. Turner's name onto the Delta Kappa Phi Plaque located in the foyer of the Harrison Hightower Textile Building.

Each year the name of the outstanding textile graduate is placed on this plaque, which was presented by the local chapter of the national honorary textile fraternity, to serve as a continuing inspiration to achievement for all textile students.

Highest scholastic average of the 1953 graduating class was obtained by **Ben H. Bullock** (right photo). For this Mr. Bullock, who is now employed at Callaway Mills Company's Manchester, Ga., plant, received the National Association of Cotton Manufacturers award.

Cover The States and Cover The World

Whether your mills are located in the United States, in our neighboring Pan American countries, in Pakistan, in Europe or the distant Belgian Congo – Stehedco and Southern are always there to provide the best in Quality Equipment . . . Delivery and Service.

In the "States" consult your local field Engineers.

If "Abroad", no matter where in our wonderful World, consult the most convenient of our many representatives to expedite your orders.

ARGENTINA & URUGUAY: H. E. Braisted & Cia., Buenos Aires, Argentina — **AUSTRALIA, NEW ZEALAND, SOUTH AFRICA:** Noel P. Hunt & Co., Pty. Ltd., Sydney & Melbourne, C.1, Australia; Noel P. Hunt & Co. (N. Z.) Ltd., Wellington, C.3, New Zealand; Noel P. Hunt (S. A.) Pty. Ltd., Pinetown, Natal, South Africa & Capetown, South Africa, Johannesburg, South Africa; Noel P. Hunt (Sou. Rh.) Ltd., Salisbury, Southern Rhodesia — **BELGIUM & BELGIAN CONGO:** Firma Paul Pflieger, Ghent, Belgium — **BOLIVIA:** S. A. Volcan, La Paz, Bolivia, S. A. — **BRAZIL:** Cia. Industria e Comercio Glossop, Rio de Janeiro and Sao Paulo, Brazil, S. A. — **CHILE:** A. V. Anthony, Ltd., Santiago, Chile, S. A. — **CHINA, HONG KONG:** Wm. Hunt & Co., Federal, Inc., USA., Hong Kong and Taipei, Taiwan — **COLOMBIA:** J. S. Wetton, Bogota, Colombia, S. A. — **COSTA RICA, HONDURAS, EL SALVADOR:** Enrique Rodriguez S., San Jose, Costa Rica, C. A.; Enrique Rodriguez S., San Salvador, El Salvador, C. A.; Enrique Rodriguez S., Honduras, C. A. — **CUBA:** Casa de Repuestos Textiles, Luyano, Habana, Cuba — **ECUADOR:** Richard O. Custer, S. A., Quito, Ecuador, S. A. — **ENGLAND:** T. Lund & Son, Ltd., Bingley, Yorkshire, England — **GUATEMALA:** Anatolio Rodriguez Pestana, Guatemala, Guatemala, C. A. — **HOLLAND:** Fa. H. Blenken, Enschede, Holland — **INDIA:** W. H. Brady & Co., Ltd., Bombay, 1, India — **MEXICO:** Adolfo Cortes V., Calle de Marconi #2, Despacho #18 — **MIDDLE EAST, EGYPT, GREECE, ITALY, GERMANY:** The Arlind Corp., Stamford, Conn. — **PAKISTAN:** W. H. Brady & Co. of Pakistan, Karachi, 2, Pakistan — **PERU:** George Checkley, Lima, Peru, S. A. — **PHILIPPINES:** P. V. Gonzalez & Co., Inc., Manila, Philippines — **SCANDINAVIA & FRANCE:** Lendt & Co., New York 17, N. Y. —**VENEZUELA:** Agencias Indutex, S.A., Caracas, Venezuela, S.A.

-15

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You CAN improve on a 95!

In skeet shooting, it takes an expert to break 95 out of 100 "clay pigeons"... but *champions* do better than *that*. They score 96, 97, 98, sometimes all 100, because they've given special, determined attention to the fine points of the sport.

In textile production, too, even *good* efficiency can be improved. For instance, it's entirely possible that a certain starch . . . perhaps even tailor-made to your own specifications... could contribute to an efficiency gain.

Why not call your Anheuser-Busch representative? He'll be glad to come and talk it over.

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What the TEXTILE MILLS are doing

Acclaim Hosiery Mills, Inc., High Point, N. C., has purchased **Colonial Hosiery, Inc.** and mill will be converted into a finishing plant for Acclaim's entire output. The Hartsville, S. C., mill is undergoing an expansion program, providing a total floor area of about 20,000 sq ft. Knitting machinery at Colonial will be moved to Hartsville.

A two-story addition to the mill is planned by **Adams-Millis Corp.,** High Point, N. C., to provide about 30,000 sq ft floor space.

Albemarle (N. C.) Mills Co. has arranged for an RFC loan for expansion purposes.

The Alsace plant of **American and Efird Mills, Inc.,** has been transformed into a pilot plant, equipped with facilities for experimental and research work. Equipment scaled to individual operation has been installed to allow members of the industrial engineering and standards department to experiment on all kinds of synthetic and cotton fibers and wool, from the raw material to the finished yarn.

On page 86 of the July issue of TEXTILE INDUSTRIES there appeared an item regarding **Riegel Textile Corporation's** new warp spinning mill at Trion, Ga. The article contained a statement that the mill has fifteen 120-spindle SS2 spinning frames. This statement was erroneous; the mill actually has 60 252-spindle spinning frames.

The Assabet Mills, Maynard, Mass., of the **American Woolen Co.** have been sold for a reported sum of $200,000. Purchaser is Maynard Industries, Inc., headed by Louis P. Pemstein, of Worcester, Mass.

A 70,000 sq ft, 2 million dollar woolen-worsted spinning and weaving mill is being built by **Ames Textile Corp.,** Lowell, Mass., at Cleveland, Ga. It is expected to be in full operation by early 1954.

A $4,000 college scholarship, offered by **Anchor Rome Mills,** Rome, Ga., to any child of an employee who could qualify, has been awarded Patty Arnold. She is the daughter of

you can't sit this one out...

Pleats that won't sit out when they're sat *on* are a boon that women have learned to look for—and are willing to pay for! And they're just one of many pace-setting advantages you can build into the fabrics you create by using Du Pont's "modern-living" fibers.

Other such exciting textile advances as thick and thin and crimpable yarns . . . and fibers that offer *built-in* shape retention, wrinkle resistance, and easy care . . . stem from Du Pont research for today's world. For today's customers *want* home furnishings and apparel that look better, wear longer, and require less care.

Use Du Pont modern-living fibers for the extras that spell a fabric success. Count on Du Pont's experience in fiber research to help you keep pace with the more demanding needs of today's customers.

Du Pont's Modern-Living Fibers

DU PONT
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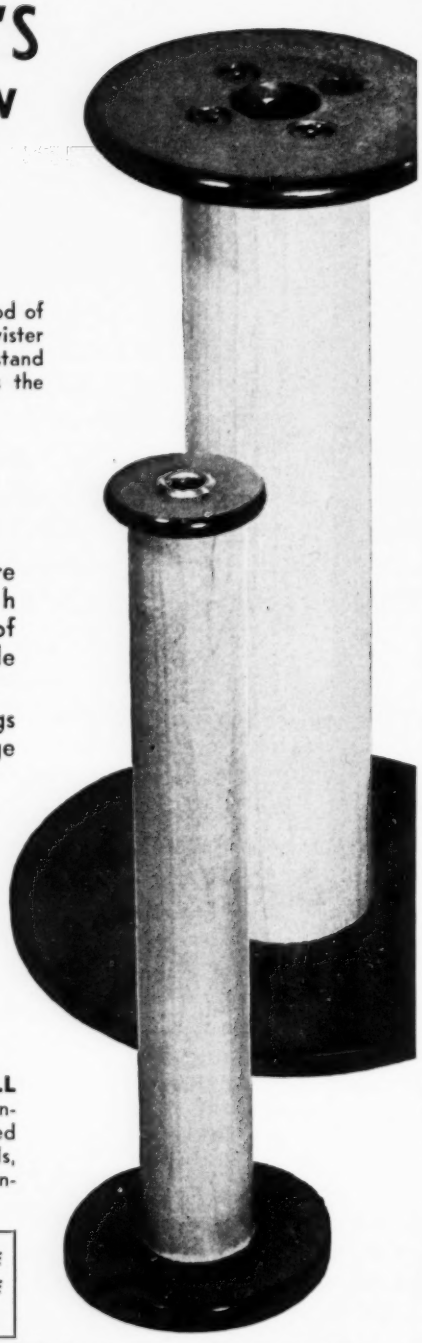
NYLON | RAYON | ACETATE | ORLON® ACRYLIC FIBER | DACRON® POLYESTER FIBER

BETTER THINGS FOR BETTER LIVING ... *THROUGH CHEMISTRY*

LESTERSHIRE'S

ANCHOR-SCREW FASTENING LENGTHENS BOBBIN LIFE!

Lestershire's Anchor-Screw method of fastening the fibre heads on twister bobbins enables them to withstand many times the load, and guards the drive slot from wear.



Other Features of LESTERSHIRE TWISTER BOBBINS:

- The hard vulcanized fibre heads remain smooth throughout the long life of these fine, custom-made twister bobbins.
- Lock-in brass spindle bearings prevent spindle wear in large size bobbins.
- Tubing prevents winding or twisting of the barrels of slim bobbins.
- Every bobbin is specially designed and fabricated for its particular application.
- Using them is true economy.

LESTERSHIRE BOBBINS OF ALL TYPES are made from hard vulcanized fibre, Phenolite (laminated Bakelite), and other stable materials, to meet specific requirements of individual mills.

LEARN NOW HOW LESTERSHIRE SPECIAL BOBBINS WILL IMPROVE YOUR PRODUCTION!

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BRANCH OFFICES AND TECHNICAL SERVICES:

NATIONAL VULCANIZED FIBRE CO.

New Haven, Conn. Chicago, Ill. Baltimore, Md. Detroit, Mich. St. Louis, Mo. New York, N. Y. Philadelphia, Pa. Pittsburgh, Pa. Rochester, N. Y. Cincinnati, Ohio Cleveland, Ohio

GREENVILLE TEXTILE SUPPLY CO. Greenville, S. C.

ODELL MILL SUPPLY CO. Greensboro, N. C.

NATIONAL FIBRE CO. OF CANADA, LTD. Toronto, Ontario

What the TEXTILE MILLS are doing

Mrs. Cleo Arnold, secretary to Loyd Rice, general manager of the mill.

Atlantic Fabrics Corp. was recently organized by officials of **F. Ducharme Fabrics, Inc.,** 21 Market St., Paterson, N. J., and has taken over and succeeded to the last named company.

The Belrug Mills, Inc., Greenville, S. C., is building an "L" shaped one-story plant to house complete facilities for weaving and finishing cotton carpets. One section is devoted to a latex machine for coating the backs of the carpets. Cost is reported to be more than half a million dollars, including equipment.

A one-story addition is under construction at **Black Mountain (N. C.) Hosiery Mills.**

Sidney Blumenthal & Co., Inc., has purchased all of the productive machinery of **Shepperd Mills, Inc.,** Manayunk, Pa. It will be moved to Wilson, N. C., plant of Blumenthal.

Controlling interest in **Botany Mills, Inc.,** Dayton Ave., Passiac, N. J., has been acquired by Bankers Securities Corp. Charles F. H. Johnson, Jr., has resigned as chairman of the board.

Recent news from **Burlington Mills Corp.:** The Bur-Mill Review, employee publication, recently published the pictures of a number of new employees along with the answers to the reporter's question, "Why did you choose Burlington when you started looking for a job?" Advancement, good working conditions, friendliness, opportunities for training, and good pay were among the reasons most frequently given. ***** A "Cost-Quality-Service" program has been instituted in the finishing department by means of meetings, plus specialized training and instruction. The plants have installed scoreboards to enable them to keep running box scores on progress being achieved in "CQS." ***** An action was recently filed in U. S. District Court by Sondra Undergarments, Inc., to restrain Burlington from attempting to monopolize trademarks embodying the word "Dream," which Sondra claims to have used since 1938 in the manufacture and sale of women's underwear and nightwear. In the acquisition of Na-

(*Continued on page* 187)

when you use

Superlitefast®

direct dyes

on rayons, mixed fabrics and cottons,

everybody benefits, all along the line—

- **the dyer pleases the manufacturer**
- **the manufacturer pleases the store**
- **the store pleases the consumer**

Superlitefasts are the

fastest-to-light direct dyes known!

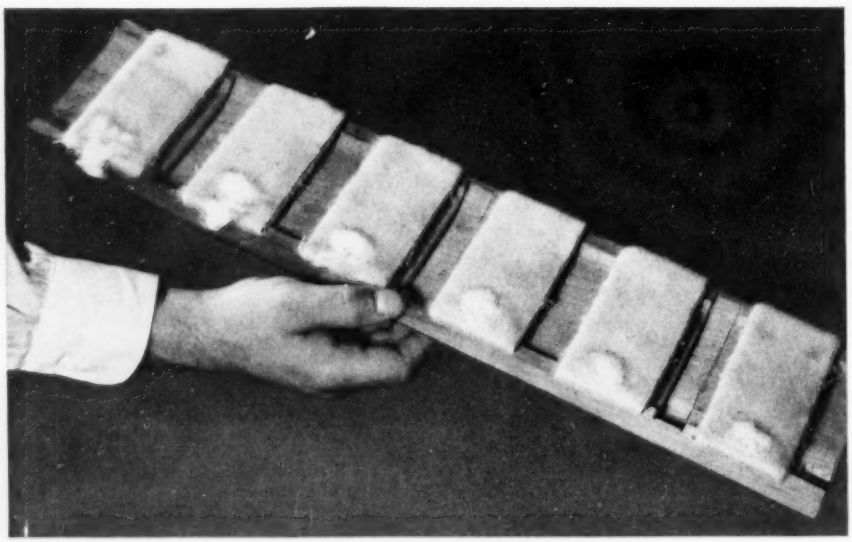
ALTHOUSE

Chemical Company, Inc.

READING, PENNSYLVANIA

pace-setter in precision dye-making

Here's



ONE LOOK at this clearer board tells you where Armstrong's newest cot, the NO-742-S, has been running. Notice how the NO-742-S packs the short fibers well back on the clearer board. This new Armstrong cover has proved its exceptional ability to stop serious eyebrowing in more than two years of spinning in many different mills.

ARMSTRONG'S

PROVED CONTROL for stubborn eyebrowing

Over 2 years of tests in spinning rooms show that Armstrong's newest cot, the NO-742-S, checks eyebrowing—even on coarse yarns.

With normal picking schedules, you can be sure you'll never see an eyebrow on spinning frames equipped with Armstrong's newest roll cover, the NO-742-S Accotex® Cot.

No matter what kind of yarn you're spinning, or how coarse it is—these new cots definitely will eliminate serious eyebrowing. Their drafting surface has the "bite" needed to pick up loose fibers and pack them well back on the clearer where they belong.

Mill-tested 2 years

Mill men themselves showed us just what these cots would do, in over two years of tests run in typical spinning rooms all over the country. One mill superintendent tells us he can walk between his frames and pick out the rolls covered with these new cots without ever lifting a clearer board. "When all the others have eyebrows," he said, "these new ones don't." And he added that the longer the test runs, the better these NO-742-S cots look.

You can feel the difference, too

An overseer tells the difference with his finger tips. He says that even after more than six months of spinning, you can feel why NO-742-S covers run like they've just been put on. These covers still have their clean drafting surface. "With the NO-742-S on your frames, you don't have to run on a short rebuffing schedule to keep down eyebrowing."

This is true because the new synthetic rubber compound developed by Armstrong gives the NO-742-S a drafting surface that keeps its "bite," a surface that stays rough as it spins, without slicking or glazing. That's why so many of the test mills reported these new covers gave top-notch spinning with but one re-buffing a year.

Ask your Armstrong man about the new NO-742-S Cot. He'll be glad to get you some samples for test frames. Armstrong Cork Co., Textile Products Department, 6508 Ivy Street, Lancaster, Penna. These new Accotex Cots are also available for sale in export markets.

ACCOTEX COTS

Let's talk HOSIERY...

The gauge goes up . . . 60 . . . 66 . . . **72.** The denier goes down . . . 20 . . . 15 . . . 12. Result, delicate beauty in stockings that must be finished with extreme care. That's why you need a Turbo AD-48 in your finishing department. Its action is gentle as a lamb, there's no jolting or banging to injure delicate threads. Quality production is assured because guesswork is eliminated — timing is automatic. And — you'll be able to do two jobs with the same machine — preboard with steam and finish board with circulated heated air, all with one operator. Production is from 120 to 130 dozen pairs of perfectly finished static free stockings per 8-hour day.

In preboarding, 24 leg forms glide into the steaming chamber at pre-determined intervals, while another 24 glide out. Forms remain upright, the fabric cannot creep. The operator does nothing but dress and strip the forms.

Finish boarding is done in the same chamber. Fan-circulated, heated air — with greater concentration on the welt and toe — assures complete, even drying. The air carries a trace of moisture to prevent static build-up and make the stockings easier to handle.

Leg forms are mounted vertically on a collapsible conveyor. They are easily changed, are efficiently spaced and angled for maximum production speed and quick inspection. You can run two sizes at one time. In both preboarding and finish boarding, machine operation can be automatic or not, depending on the operator's production rhythm.

Why not get all the facts! Write today for the complete Turbo story on quality hosiery finishing.

TURBO MACHINE COMPANY
Lansdale, Pennsylvania, U.S.A.
Southern Rep.: F. W. Warrington Co., Charlotte, N. C.

. . . then as now

YARN DYED FABRICS

were Supreme

This yarn dyed fabric was woven in Spain about 1550 A.D. – and very likely was purchased with loot from recently-conquered America.

Long before the dawn of history color was used to make fabrics more desirable. Always, the ultimate in originality and distinctiveness was achieved when patterns were woven from colored yarns.

Now, as then, the best fabrics are yarn dyed. If you wish exceptional quality in your colored yarns and expert advice in their use, come to Franklin Process – yarn merchants and the largest package yarn dyers in the world.

16th Century Spanish Fabric. Museum of Art, R. I. School of Design.

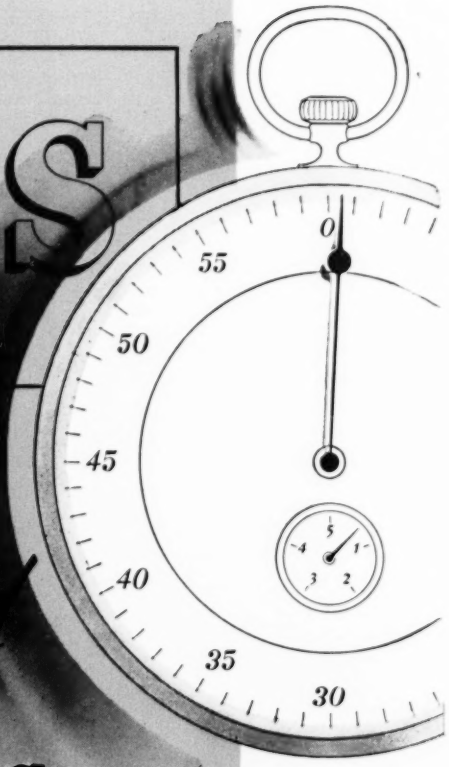
Franklin Process

YARN MERCHANTS AND LARGEST PACKAGE DYERS IN THE WORLD

Providence Philadelphia Greenville Chattanooga

New York Representative – 40 Worth Street

Nekal NS



for *Split Second* Wetting

with Minimum Foaming

You'll get peak efficiency when using NEKAL NS for wetting and rewetting all textiles. It works equally well in either cold or hot solutions and its high speed performance in low concentrations makes NEKAL NS very economical to use. We welcome your request for samples and application recommendations on NEKAL NS in your particular wetting or rewetting problem.

ANTARA® CHEMICALS

(Division of General Dyestuff Corporation)

435 HUDSON STREET • NEW YORK 14, NEW YORK

gdc ANTARA

BRANCHES: Boston • Providence • Philadelphia • Charlotte, N. C. • Chicago • Portland, Ore. • San Francisco

IN CANADA: Chemical Developments of Canada Limited, Montreal

Nalex WARP SIZE

lowers weave room humidity to 70%

NALEX lets you cut relative humidity—to 70% or lower.

NALEX is a *slow congealing* warp size. You need only enough tallow to prevent sticking to drying cylinders. Less tallow means that less moisture is needed in the air to plasticize the starch film.

Further, less moisture means you save on humidification costs. Your operators are more comfortable. Leather and wood loom parts last longer. Metal corrosion is reduced. Looms are easier to clean. Paint stops peeling.

NALEX is quick-cooking. Only 20 or 30 minutes at the boil. Its film is smooth and strong —and always uniform.

Ask for a NALEX demonstration.

National STARCH PRODUCTS

270 Madison Avenue, New York 16; Boston; Providence; Philadelphia; Atlanta; New Orleans, and other principal cities.

Stay Ahead with *Reiner*

Photos Courtesy:
BANGOR MILLS, INC.

IN today's highly competitive tricot market, the question of what machine to use is of paramount importance. High speeds, consistent with top quality, rugged, trouble-free and dependable 'round the clock operation are the combination leading to improved sales and higher profits. Consider then these features:

Reiners and only Reiners are convertible from 2- to 3-bar. A mechanical beam feed to assure automatic and absolute quality control—a direct take-up device, driven from the cam shaft through a chain drive, for precise quality settings—Pattern wheel or chain link drive for unlimited versatility in fabric pattern—Fully automatic lubrication for trouble-free operation—Instantaneous acceleration and deceleration for the elimination of stop marks—Available in all gauges.

Last but not least, the Reiner know-how based on delivery of almost 1,500 tricot machines since 1945—every one of which is still producing Tricot at its Best!

Reiner—and only Reiner—offers a full line of warpers and creels—in short, warp-knit equipment from cone to knitted fabric.

YOU DO WELL TO STAY AHEAD WITH REINER

1903 50th Anniversary 1953

ROBERT REINER INCORPORATED

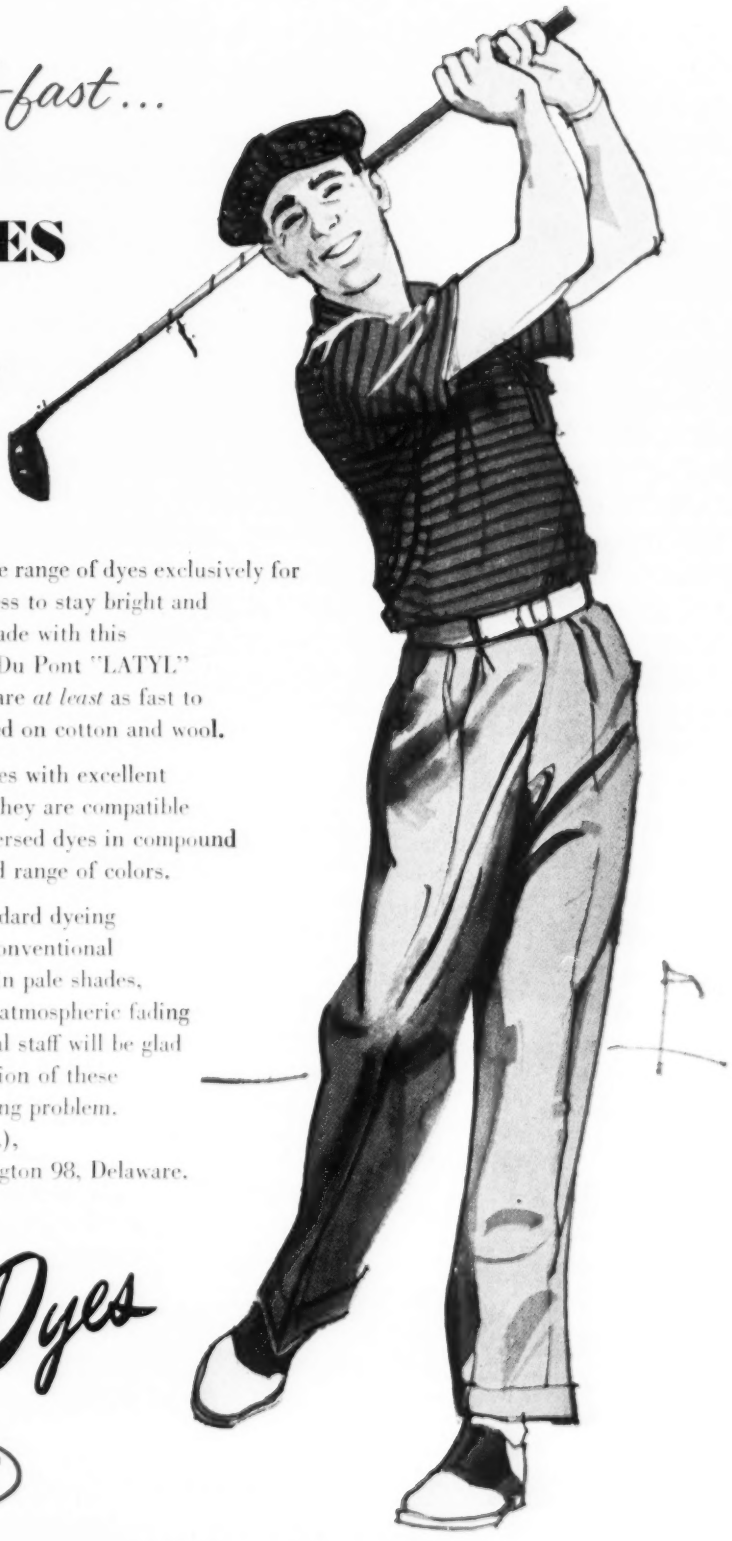
10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

FOUNDED IN 1903 **550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY**

Sun-fast, wash-fast...

DU PONT "LATYL"* DYES *for* DACRON†



Now . . . Du Pont has developed a wide range of dyes exclusively for "Dacron." They have the color fastness to stay bright and fresh throughout the life of fabrics made with this durable new fiber. In fact, these new Du Pont "LATYL" colors properly applied on "Dacron" are *at least* as fast to light and washing as the best dyes used on cotton and wool.

"LATYL" dyes produce brilliant shades with excellent fastness to washing . . . to sunlight. They are compatible with one another and with other dispersed dyes in compound shades . . . make possible an unlimited range of colors.

"LATYL" dyes can be applied by standard dyeing techniques similar to those used for conventional dispersed colors. Some of these dyes, in pale shades, have exceptional fastness to light and atmospheric fading on cellulose acetate also. Our technical staff will be glad to help you in the choice and application of these new colors . . . or on any other coloring problem.
E. I. du Pont de Nemours & Co. (Inc.),
Dyes and Chemicals Division, Wilmington 98, Delaware.

*REG. U. S. PAT. OFF.
†TRADE-MARK FOR DU PONT'S POLYESTER FIBER

Du Pont Dyes

DU PONT
REG. U.S. PAT. OFF.

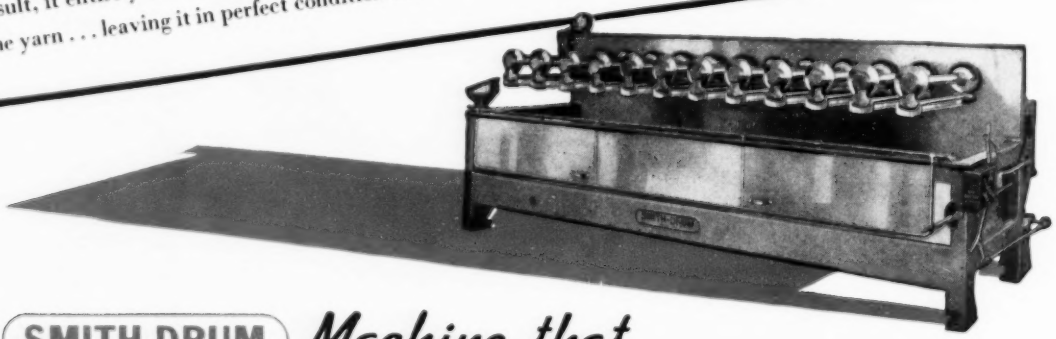
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

. . . and there's ONLY ONE WAY to Prevent it.

If your present skein dyeing equipment results in snarled yarn or broken filaments, you are incurring needless extra cost and time in back-winding. There is one sure way to end this waste and *only* one . . . install the SMITH-DRUM Type CSD Skein Dyeing Machine.

This is the machine that introduced the principle of "moving the liquor instead of the yarn." As a result, it entirely eliminates tangling or breaking of the yarn . . . leaving it in perfect condition for winding. It also dyes yarn more quickly and uniformly than other methods, resulting in savings of from 10% to 30%. If you dye filament rayon, nylon and other synthetic yarns or fine count cotton yarns in skein form, it will pay you to get the facts on this proven money-saving machine. Write . . .

SMITH, DRUM & COMPANY
432 W. Allegheny Ave., Phila. 33, Pa.



The SMITH-DRUM *Machine that Moves the Liquor Instead of the Yarn!*

...with TYCOL lubricants on hand!

The Lube that was "Tailored" for Textile Mills! Here's what we mean by lubricants "engineered to fit the job": awhile back, the Engineering Department of a well-known mill asked us to develop an oil that would meet their exacting loom lubrication requirements. After intensive study of the problem, we came up with Tycol Amortac 76. In actual loom usage, we *proved* Amortac to be easy to handle and virtually "splatter-proof," even when looms are being blown down. Result? An oil that features initial low cost . . . that by itself satisfies complete loom lubrication requirements (no chance of a lube mix-up!) . . . minimizes 'seconds' . . . will not build up with lint while feeding through the bearing opening. In every way, Amortac 76 is engineered to do a specific job. One reason why it pays to consult your local Tide Water Associated office . . . first!

TYCOL
INDUSTRIAL LUBRICANTS

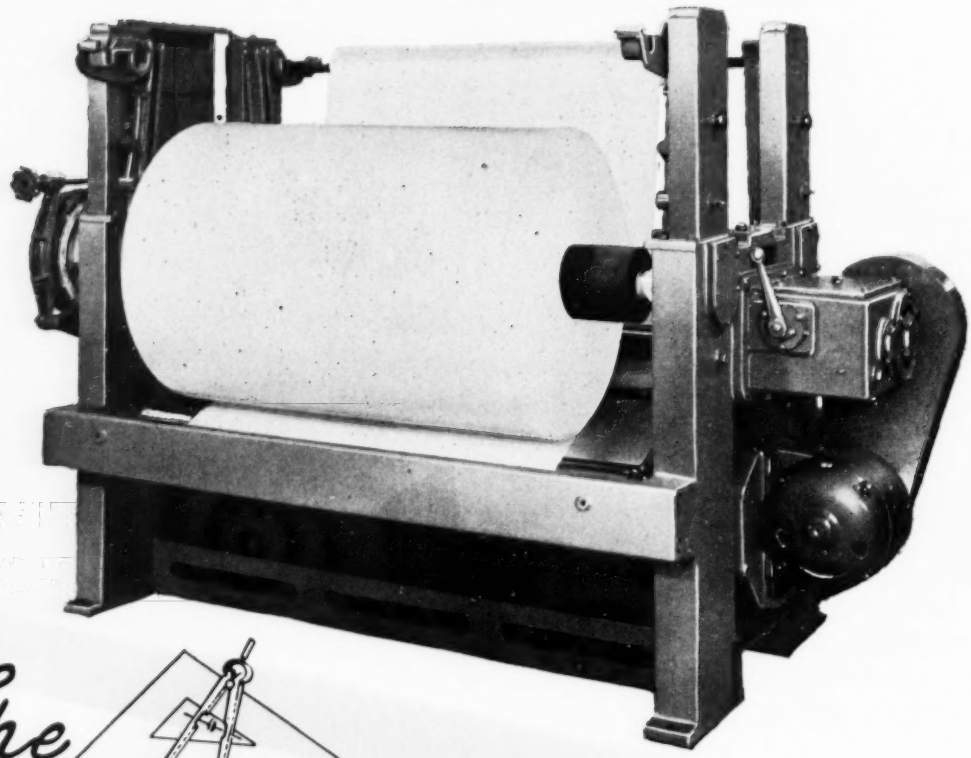
Boston • Charlotte, N. C. • Pittsburgh
Philadelphia • Chicago • Detroit
Tulsa • Cleveland • San Francisco
Toronto, Canada

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE · NEW YORK 4, N. Y.

Over 300 Tycol industrial lubricants are at your disposal . . . engineered to fit the job!

REFINERS AND MARKETERS OF VEEDOL . . . THE WORLD'S MOST FAMOUS MOTOR OIL

A NEW MASTERPIECE OF JIG DESIGN



The Dyemaster

Van Vlaanderen Engineers—long masters of jig design—have news, important news, for broadgoods dyers. A new jig for ALL FABRICS—cotton, silk, synthetics, blends—is now ready to help you get higher production and better dyed cloth at new savings in maintenance and repair.

This jig is the V. V. DYEMASTER, built to meet the exacting production requirements of American Dyers—a machine with American standards, parts and dimensions.

CONSTANT CLOTH TENSION. Practically none for sheers to full for cotton ducks.

CONSTANT CLOTH SPEED. Evener dyeing from end to end automatically.

"ROBOTROL" AUTOMATIC CONTROL. Starts, reverses and stops automatically.

HYDRAULICALLY DAMPED OSCILLATING EXPANDER ARRANGEMENT. No uneven dyeing due to strains from starts and reverses.

34" BATCH ROLLS. Larger batches than any other, easily and quickly loaded on angle slots with latch lock. Power or regular unloading.

The DYEMASTER is the most versatile jig ever built. Has every Van Vlaanderen patented improvement. Send for new folder giving a detailed description and specifications of this advanced machine.

VAN VLAANDEREN MACHINE COMPANY

MACHINE COMPANY

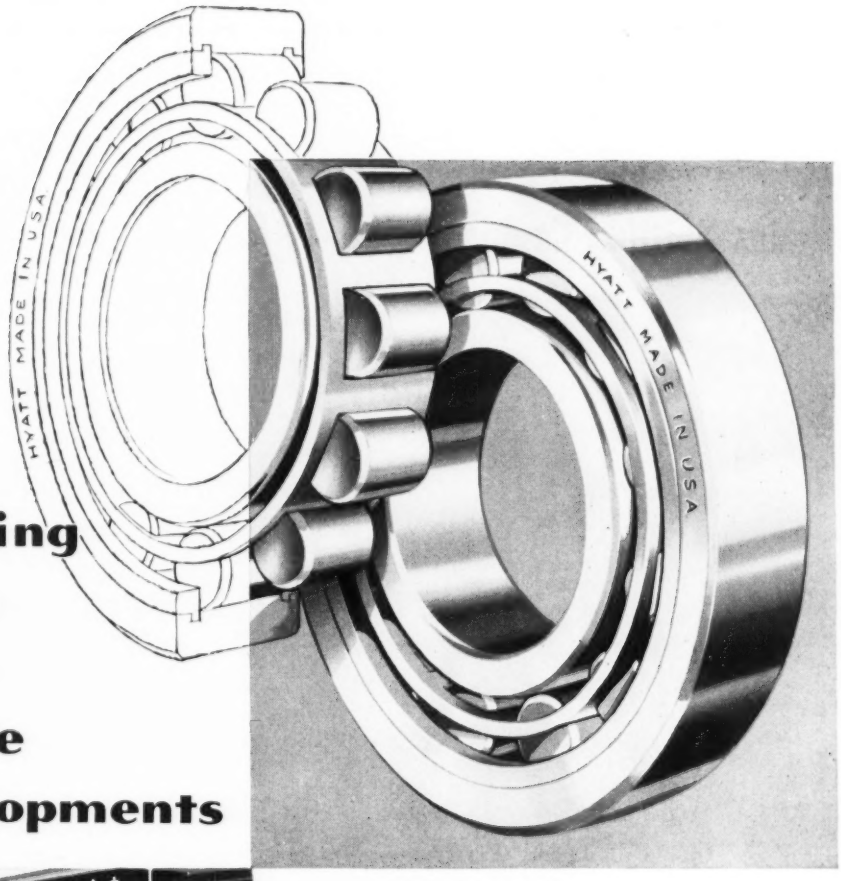
370 Straight Street, • Paterson 3, New Jersey

Cable address: Vlaanderen, Patersonnj, U.S.A.

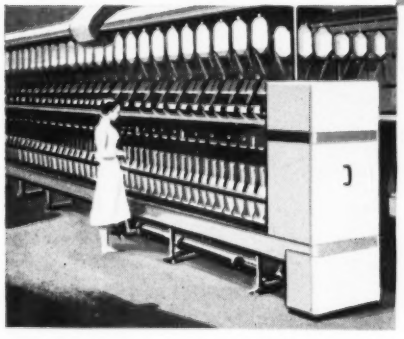
In the South — Parrott and Ballentine • 610 South Carolina National Bank Building • Greenville, South Carolina

In Canada — Fawcett and Company • 34 High Park Boulevard • Toronto, Canada

WORLD'S LARGEST MANUFACTURER OF MACHINES FOR PROCESSING MODERN FABRICS



Keeping pace with textile developments



Hyatt precision bearings

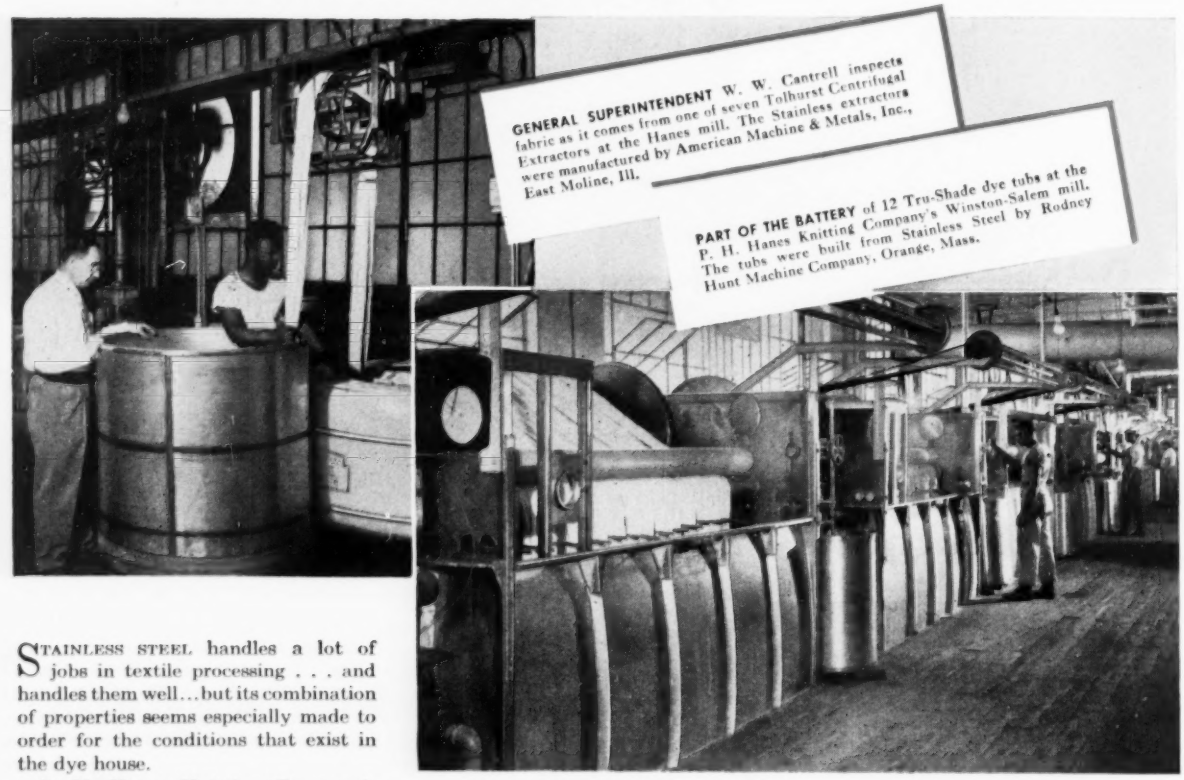
Throughout the textile industry, modern methods and Hyatt-equipped machinery are making possible the production of higher quality yarn and cloth at lower cost. Builders of looms and preparatory and finishing equipment know that by using Hyatt bearings they can offer the advantages of faster machine operations, reduced power costs and minimized lubrication problems. If Hyatts are not standard equipment on the machines you purchase, they can be had upon specification—or used for changeovers. For data about Hyatt bearing performance, write to Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARINGS

For further information use Handy Return Card, Page 198

LONG-LASTING, EASY-TO-CLEAN STAINLESS STEEL

is P. H. Hanes Knitting Company's choice for extractors and dye tubs



GENERAL SUPERINTENDENT W. W. Cantrell inspects fabric as it comes from one of seven Tolhurst Centrifugal Extractors at the Hanes mill. The Stainless extractors were manufactured by American Machine & Metals, Inc., East Moline, Ill.

PART OF THE BATTERY of 12 Tru-Shade dye tubs at the P. H. Hanes Knitting Company's Winston-Salem mill. The tubs were built from Stainless Steel by Rodney Hunt Machine Company, Orange, Mass.

STAINLESS STEEL handles a lot of jobs in textile processing . . . and handles them well...but its combination of properties seems especially made to order for the conditions that exist in the dye house.

P. H. Hanes Knitting Company's mill at Winston-Salem, N. C., passes along a favorable report on the Stainless Steel equipment in its dyeing and bleaching department. Seven centrifugal extractors, installed in 1941, and 12 dye tubs, installed between 1946 and 1948, owe their performance records to Stainless Steel construction.

General Superintendent W. W. Cantrell says, "The things we like most about Stainless Steel equipment are that Stainless is long lasting, easily cleaned and free from maintenance problems."

The smooth, dense, durable surface of Stainless Steel guards against snagging of threads and fabrics. The ease with which it can be cleaned prevents color carry-over even when going from a dark to a light shade. And there's no chance of rust spots or stains on the fabric from the Stainless equipment.

If you're using Stainless equipment today, you've seen what a difference it can make in processing operations. It will pay you to look further for jobs where you can take advantage of its unique combination of properties. And when you do, ask your equipment fabricator to use perfected, service-tested U·S·S Stainless Steel.

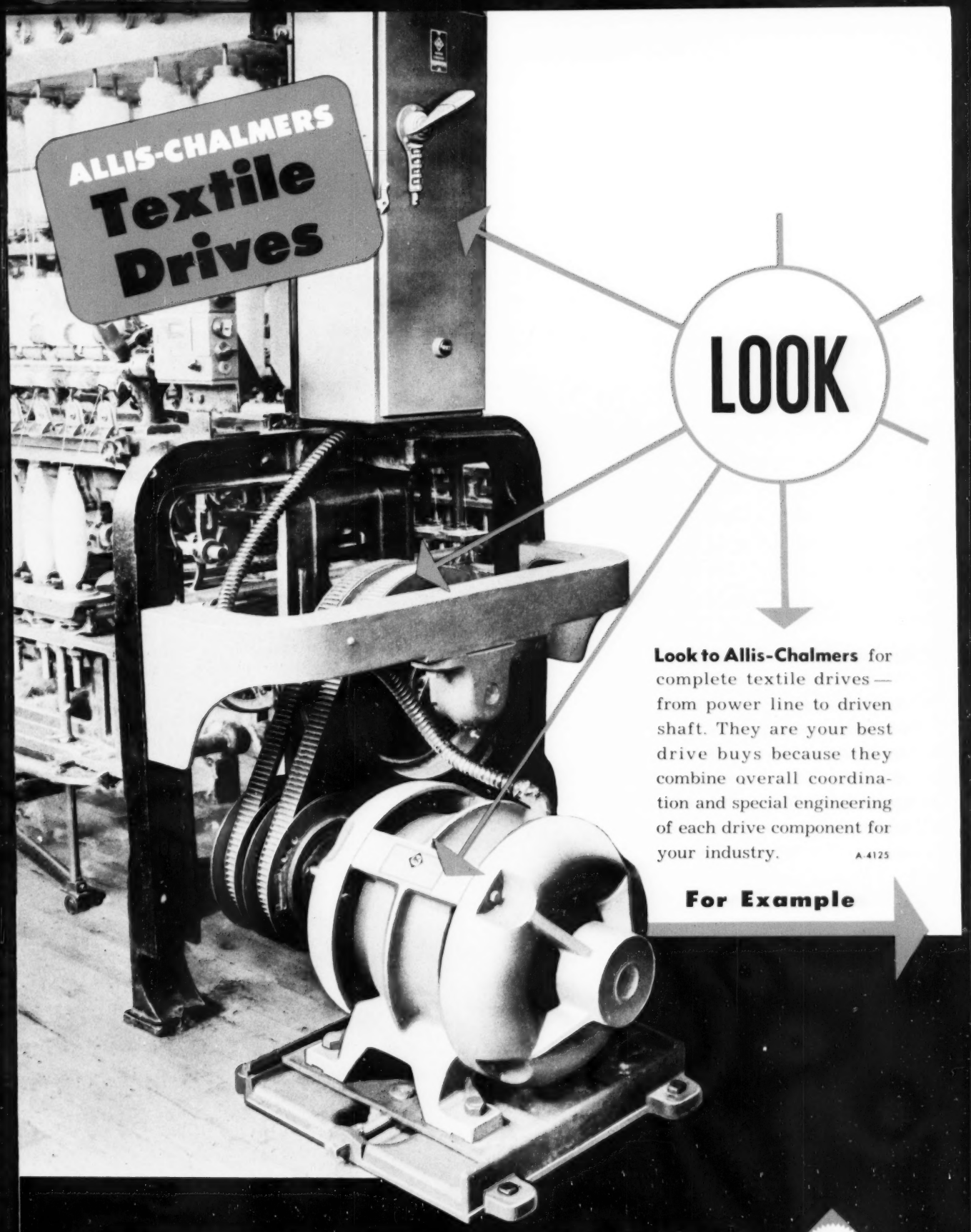
UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

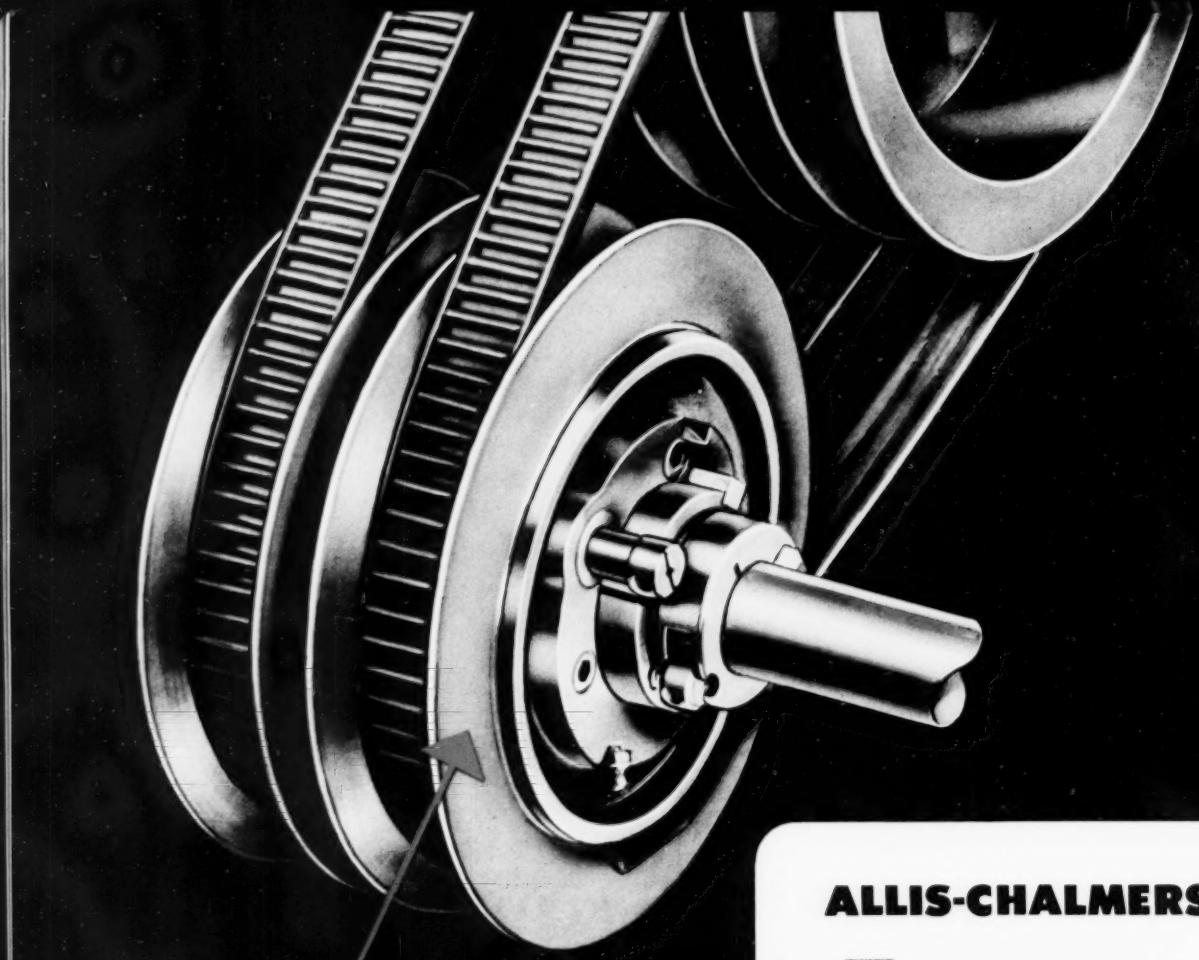
U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

3-08

UNITED STATES STEEL


ALLIS-CHALMERS
Textile
Drives
LOOK
Look to Allis-Chalmers for complete textile drives — from power line to driven shaft. They are your best drive buys because they combine overall coordination and special engineering of each drive component for your industry.
A-4125
For Example
ALLIS-CHALMERS



ALLIS-CHALMERS

Texrope Drives

LOOK At Advantages of Wide Range *Vari-Pitch* Sheaves

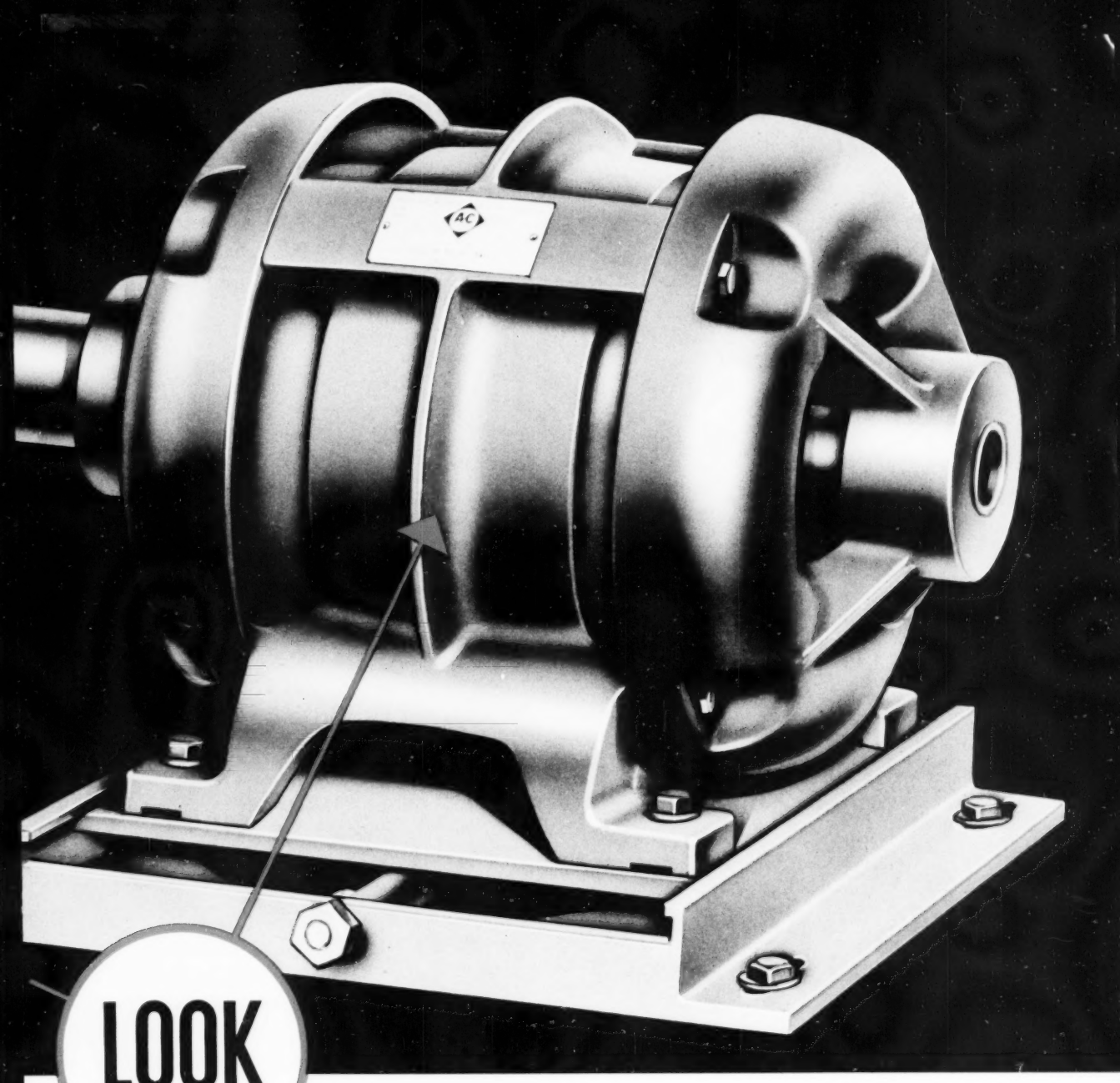
1 Sheave can be mounted so adjustment is on motor side . . . out in the open . . . instead of in cramped space between sheave and spinning frame.

2 Adjustment is fast and accurate. After unlocking the assembly, you simply turn a single adjusting screw, using a lever rod that slips through a hole in head of screw.

3 Spin many yarn numbers — without changing sheaves. Speed adjustment is stepless over a range of nearly 2 to 1. You get the exact speed needed for yarn number to be spun. Instead of changing sheaves to change yarn numbers, use an Allis-Chalmers textile drive with wide range *Vari-Pitch* sheave.

For details on this sheave and other *Texrope* drive products ask your Allis-Chalmers distributor or district office for bulletin 20S7811. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.



LOOK At Non-Clog Design of *Quick-Clean* Motors

Powerful fans sweep lint-laden air into motor and right out again, through large unobstructed ventilating openings.

All internal air passages are smooth, hard and streamlined so that lint cannot lodge.

Sealed and pre-lubricated double width single row ball bearings are an important feature of the Allis-Chalmers *Quick-Clean* motor. They will operate for long periods without attention of any kind. When motor is dismantled, they may then be cleaned and repacked. Inside face of bearing is protected from lint by a collar pressed onto motor shaft.

Quick-Clean motors are built with special acceleration and torque characteristics to meet requirements of roving frames, cards and other machines. A totally-enclosed non-ventilated loom motor is also available.

Ask your Allis-Chalmers distributor or district office for details. Allis-Chalmers, Milwaukee 1, Wisconsin.

Quick-Clean is an Allis-Chalmers trademark.

LOOK

ALLIS-CHALMERS "Certified" SERVICE

At Specialized Service that Backs these Drives

Allis-Chalmers distributors and district offices are equipped to provide the application help you need. In addition, the distributors listed below operate "Certified Service" shops. Here factory-approved methods and parts are used to assure like-new service from your motors, transformers and control.

Allis-Chalmers District Offices and Certified Service Shops in Textile Areas

Allis-Chalmers textile specialists are located in the following cities:

Atlanta, Georgia
Birmingham, Alabama
Boston, Massachusetts
Charlotte, North Carolina
Chattanooga, Tennessee
Dallas, Texas
New Orleans, Louisiana
Providence, Rhode Island
Richmond, Virginia

Certified Service Shops

ALABAMA
- Birmingham
  Electrical Repair & Service Co.
  2411 First Ave., South
- Montgomery
  Standard Electric Co.
  505 N. Decatur St.

CONNECTICUT
- Hartford
  Charles H. Leppert
  100 Walnut Street
- Waterbury
  Electric Motor Repair Co., Inc.
  2101 S. Main Street

GEORGIA
- Albany
  Georgia Electric Co.
  927 Roosevelt Ave.
- Atlanta
  Bearden-Thompson Electric Co.
  1085 Bankhead Ave., N.W.

NEW HAMPSHIRE
- Concord
  A. S. Tracy
  28 Green Street

NORTH CAROLINA
- Charlotte
  Southern Electric Service
  Co., Inc., 714 W. Trade Street
- Greensboro
  Southern Electric Service
  Co., Inc.
- Rocky Mount
  Hammond Electric Company
  824 S. Church Street
- Columbus
  Smith-Gray Electric Company
  710 Third Ave.

LOUISIANA
- New Orleans
  Industrial Electric, Inc.
  3227 Magazine Street
- Shreveport
  Shreveport Armature &
  Electric Works, 800 Spring St

MAINE
- Brewer
  Stanley J. Leen Company
  54 Wilson Street

MASSACHUSETTS
- Lawrence
  Roland B. Glines Co.
  265 Lowell Street
- Springfield
  Electric Motor Repair Co.
  11 Park Street

SOUTH CAROLINA
- Greenville
  Southern Electric Service
  Company, Inc.
- Spartanburg
  Southern Electric Service
  Company, Inc.

TENNESSEE
- Columbia
  Middle Tennessee Armature
  Works, 113 Andrews St.
- LaFollette
  Standard Armature Works
  LaFollette, Tenn.
- Memphis
  Industrial Electric & Supply
  Co., Inc., 62 Auction Ave.

TEXAS
- Amarillo
  G. E. Jones Electric Company
  Inc., 212 N. Polk Street
- Dallas
  Industrial Electric Equipment
  Co., 1119 S. Industrial Blvd.
- Houston
  Roy A. Berentz Co.
  1400 Carr St.

VIRGINIA
- Richmond
  Wingfield & Hundley
  13 South 17th Street
- Roanoke
  Virginia Armature Company
  310 W. Salem Avenue

ALLIS-CHALMERS

Get More Information

Allis-Chalmers Manufacturing Company, Milwaukee 1, Wisconsin

Please send me literature checked below.

- ☐ Handy Guide to Motor Selection 51B6052
- ☐ *Quick-Clean* Textile Motors 51B6055B
- ☐ Across-the-Line Starters 14B7132
- ☐ Reduced-voltage Starters 14B7215
- ☐ Wide Range Stationary Control Sheaves 20S7811
- ☐ *Vari-Pitch* Drive Engineering Data 20B7499

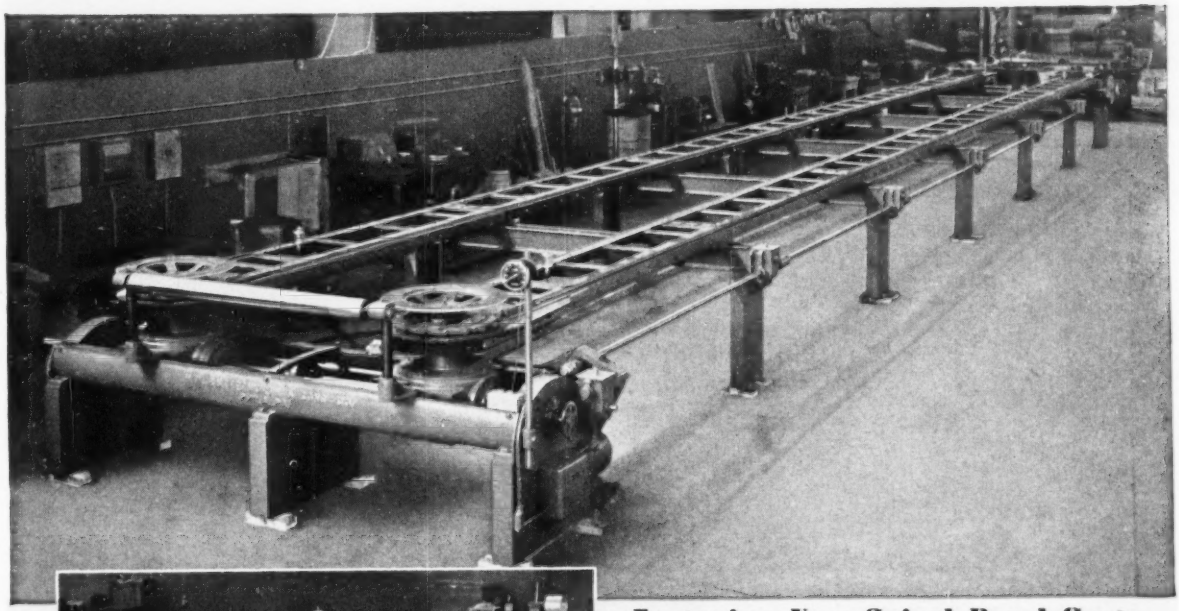
Name..... Title..... Company.....

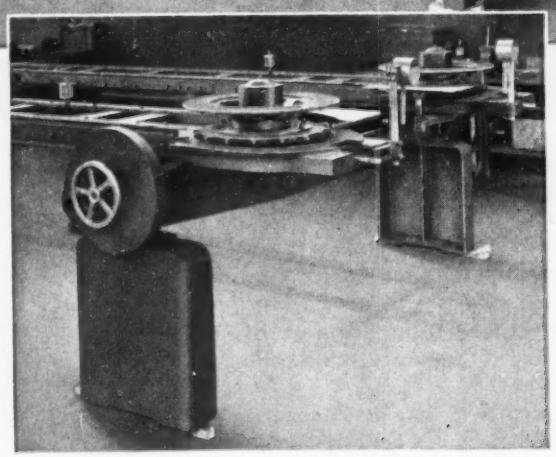
Street..... City and State.....

A-4125

TENTERING . . . Duck to Nylon Tricot

At Speeds Up to 150 Yards per Minute





(Above) Erecting floor view of new Butterworth high-speed Straight Automatic Tenter.

(Below) Close-up of entering end, with large sprocket for varying types of chain. Butterworth is also equipped to handle repairs on tenter clamps.

Featuring New Spiral Bevel Gear Drive . . Wider Adaptability . . More Production for Your Tentering Dollar

Now, in one competitively priced machine, you can combine fast tentering with smooth efficiency on every fabric from duck to nylon tricot. It's the new Butterworth Straight Automatic Tenter, with speeds up to 150 yards per minute and greater flexibility than ever before.

Sixteen-tooth precision spiral bevel gear provides strong, steady drive and long, trouble-free service. Readily adaptable to varying types of tenter chains for use on the widest range of fabrics. Speed and width indicators are within easy reach of operator, helping to reduce seconds where they are most costly. Horsepower requirements are low.

Job-engineered to your specific needs, the Butterworth Straight Automatic Tenter is available in any width, any length. To speed your production and cut maintenance costs, let a Butterworth engineer give you facts and figures on the new Butterworth Tenter. No obligation, of course.

H. W. BUTTERWORTH & SONS CO.
Bethayres, Pennsylvania

1211 Johnston Building, Charlotte, North Carolina
187 Westminster Street, Providence, Rhode Island

Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Finishing & Embossing : : Pot Spinning Machines for Synthetic Fibers : : Calender Rolls : : Tenter Chains

BUTTERWORTH

91 OF THE TOP 100

Better than we knew

In reading a recent independently prepared list of the 100 leading textile manufacturing firms in America, we were struck by the number of familiar names.

A close cross-check with our own files confirmed a dawning realization . . . and handed us the most pleasant surprise we've experienced in years.

Of the 100 top textile firms in the nation, 91 are users of Bahnson equipment.

91 OF THE TOP 100

We believe this impressive preference is due in great measure to the completeness of our service . . . to the policy that every mill, every job, is an individual problem with an individual solution.

The majority of these installations are completely integrated systems . . . with humiducts or air washers, controls, grilles, dampers and most other components designed, fabricated and installed by our own textile air conditioning specialists.

Whether your mill is large or small — your air conditioning problem simple or unique — we have the engineers, the experience, the equipment for the proper solution.

91 OF THE TOP 100

Bahnson Company

ENGINEERS AND MANUFACTURERS

WINSTON-SALEM, N. C.

Seal of Achievement

In the last fifty years we have witnessed—and made significant contributions to—the technical progress of the textile industry. Continuous cooperation between this industry and our research and field staffs is the key to our successful development of an impressive group of efficient products for textile application. Following are a few of those which we feel have earned our Seal of Achievement:

***ALGEPON V A**® Auxiliary for use in dyeing vat colors to retard reoxidation of the reduced bath with consequent production of a full, uniform shade;—also effective in stripping vats and naphthols.

***ANTHOMINE**® Auxiliary for wool dyeing, produces full even shade and soft hand in stock, yarn and cloth—excellent for tippy wool.

ARIPERM P M® Protects dyed acetates from atmospheric gas fading. May be applied directly in dyebath or on quetsch as a finish.

ARKOIL EMULSION Appropriate blend of vegetable oils for use as a stock lubricant in carding and spinning cashmere, angora and fine wool yarn. Contains no mineral oil and scours completely out of the yarn or subsequent fabric with minimum mechanical action.

ARKOLENE® A group of very fast wetting out and penetrating agents. Used in wetting out, carbonizing, dyeing and finishing baths where rapid and complete penetration of the liquor is desired.

CENATOL H S Naphthol dyeing auxiliary for hot method of naphtholating. Insures a clear bath without use of alcohol.

CULOFIX® Dye fixative designed to prevent color migration and bleeding of direct dyeings. Also imparts a soft, pleasing finish.

***DERGON O M**® Highly concentrated nonionic detergent that is very effective in replacing soap in scouring wool, yarn and pieces.

HYDRO-PRUF® Durable silicone water repellent. Produces exceptionally high spray ratings on many types of fabrics that withstand numerous washings and dry cleanings, without substantial loss of water repellency.

KERANOL N K® Produces a durable soft, mellow hand in wool, cotton and rayon fabrics. Resists yellowing during storage and can be used in alkaline, neutral or acid finishing baths or with resin finishes.

***PARAMEL G T**® Outstanding softener for finishing cottons, rayons and synthetic blends. Excellent resistance to yellowing.

***PARAMINE**® A cationic substantive finish that is used to impart fullness and increased softness to synthetic and natural fibres.

PARAPON S A® Exceptional leveler for dyeing operations where it is difficult to obtain a uniform, full shade. Particularly useful in dyeing acetate fabrics for dispersing the color and as addition to dyebath for even shade throughout the pieces.

VARKON F P® Metal sequestering agent that is particularly effective for overcoming troublesome iron contamination of dyebaths. Assists in production of bright full shades.

*PATENTED

ARKANSAS CO., INC. · NEWARK, NEW JERSEY

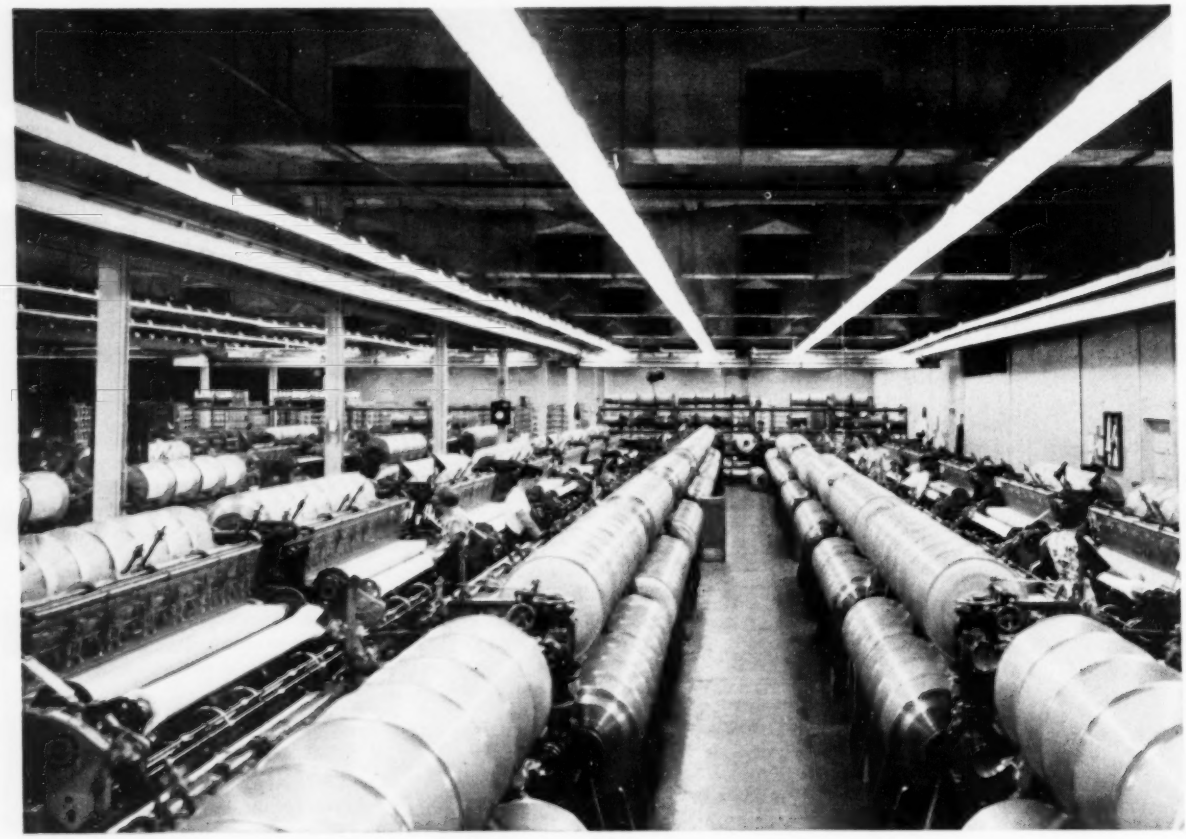
Products for all Textile Processes

BLEACHING	DYEING	MILDEW-PROOFING	SCOURING	STRIPPING
DELUSTERING	FINISHING	MOTH-PROOFING	SHRINKAGE-CONTROL	THROWING
DISPERSING	LUBRICATING	PENETRATING	SOFTENING	WATER-PROOFING

air conditioning

helps knit tricot at Deering Milliken's newest mill

There are two things to observe particularly in this photograph taken at Gayley Mill in the green hills outside Marietta, South Carolina. ▪ One is the high-speed modern machinery on which tricot is knit. The other is the well-designed duct distribution system which carries the conditioned air through the plant. ▪ Carrier engineers worked closely with Deering Milliken engineers to develop the best possible climate for the knitting operation. The Carrier system, designed and built for this specific plant, accurately controls temperature and humidity to keep



quality up despite close tolerances and high speeds. ▪ Other Carrier equipment at Gayley air conditions the pleasant office space, and the cafeteria. ▪ Whether you spin or weave or knit, your plant can profit by Carrier Air Conditioning. Perhaps your mill has an evaporative cooling system which controls humidity but not temperature. Such systems often can be modernized very simply by the addition of a Carrier Centrifugal Refrigerating Machine. Write for our booklet, "Textile Air Conditioning," which tells the story. We'll gladly send it to you without cost. Write Carrier Corporation, Syracuse, New York.

Carrier

air conditioning · refrigeration
industrial heating

ALSiMAG®
GUIDES for Doublers

GIVE YOU: NO POINT OF SUDDEN FAILURE
LONGER LIFE • HIGHER SPEEDS • HIGHER TENSIONS
NO SECONDS DUE TO UNDETECTED GUIDE FAILURE
LOWEST GUIDE COST PER POUND OF YARN PROCESS

These hard, homogeneous AlSiMag guides permit you to run abrasive yarns at high speeds and high tensions. These guides are so hard that wear is very gradual. Since the material is homogeneous it has no surface "skin" to wear through and cause undetected yarn damage.

These AlSiMag guides have been used for many years by mills all over the country. Everywhere that cost figures have been made available to us, these guides have shown far longer life and their cost has been lower per pound of yarn processed.

If your process would be improved by a special guide, we can make it to your specifications. Test samples of special designs can be made at reasonable cost without tool or die costs. This enables you to try out your ideas with small investment.

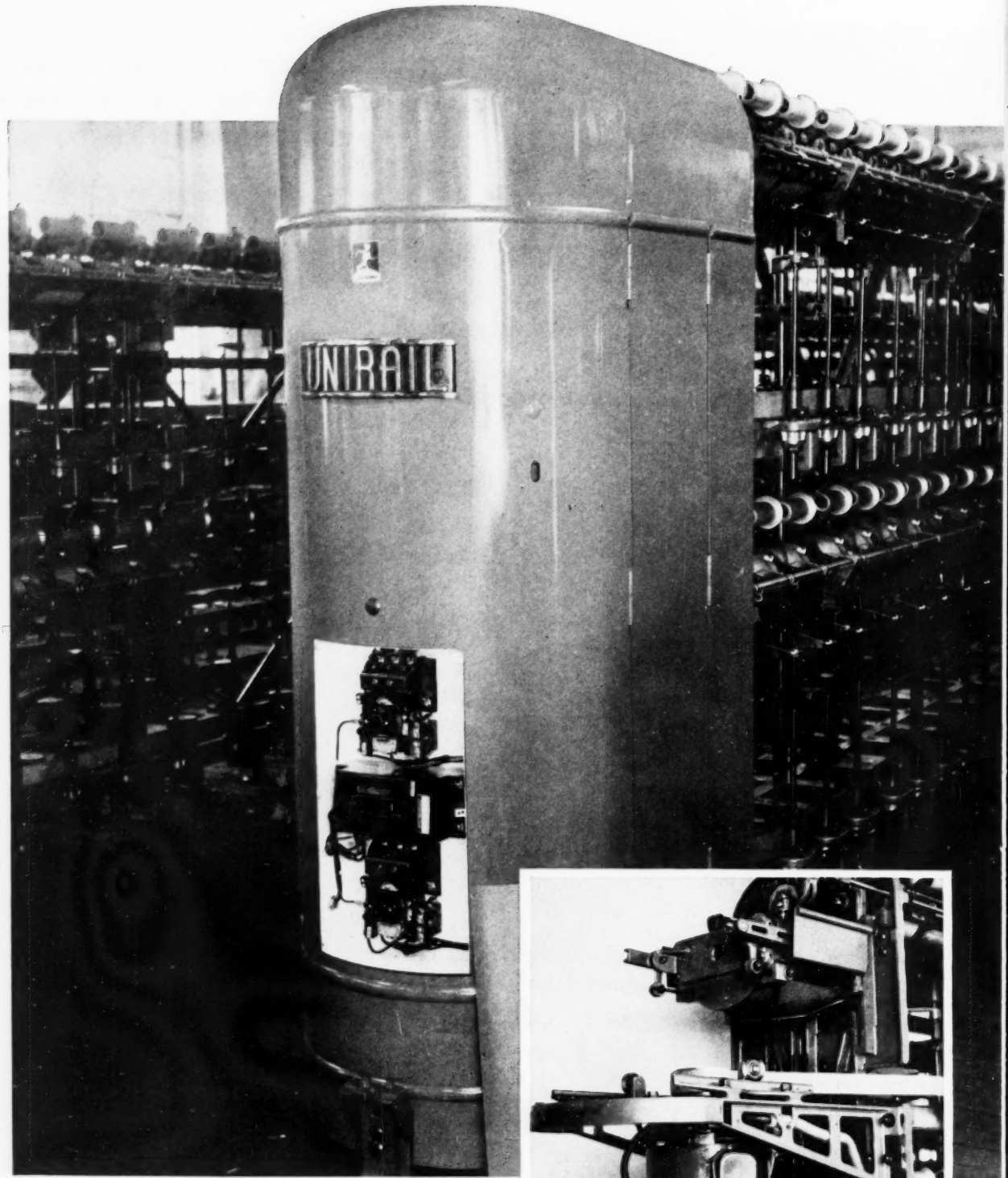
*THESE **AlSiMag** GUIDES FOR DOUBLERS ARE STANDARD ITEMS AVAILABLE FROM STOCK. TEST SAMPLES ON REQUEST.*

Many mills have reported that it would be economically impossible to process synthetic yarns without these AlSiMag guides. Samples for tests will be sent without charge. Try these guides. Keep a record of costs and results. Let your own records tell the story.

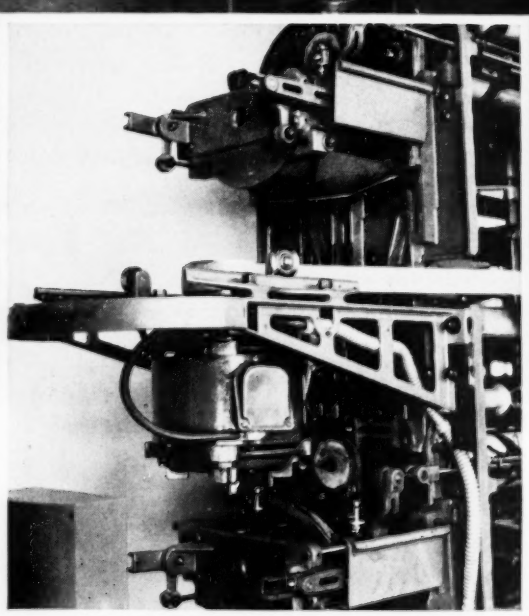
52ND YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION
A Subsidiary of Minnesota Mining and Manufacturing Company
CHATTANOOGA 5, TENNESSEE

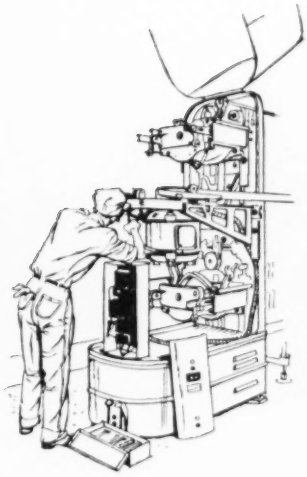
SALES ENGINEERS: NORTH AND EAST: Jay S. Gosnell, 671 Broad St., Newark, N. J., Mitchell 2-8159. SOUTHEAST: Joe E. Spearman, 401 Belton St., Charlotte, N. C., 4-1525. ALL OTHER AREAS: J. B. Shacklett, American Lava Corporation, Chattanooga 5, Tenn., 5-3411. CONTINENTAL EUROPEAN REPRESENTATIVE: P. C. Huguenin Luzern, Gerbergasse 6, Luzern, Switzerland



Easy-to-reach control compartment at motor end of uptwister has removable panel, here shown leaning against the uptwister's housing.



Small size and accessibility of the Westinghouse Motor when it's mounted on the uptwister are evident in this close-up of Universal's Unirail.



New Westinghouse drive helps Universal pack high hp in small space

Helping machinery manufacturers solve their drive problems is something Westinghouse engineers do well. Recently, Westinghouse collaborated with the Universal Winding Company to design an uptwister drive that licks a troublesome space problem. The new drive has the power to match increasing spindle speeds and the compact dimensions needed for double-deck operation.

Cuts power costs

Universal uses this special motor and control in its Unirail* Uptwisters. Spacesaving is only one advantage in this power package. Dynamically balanced at the factory, the motor's vibrationless operation cuts power costs and reduces wear on the machine.

Westinghouse solves space riddle

Motor frame is rolled steel, which requires less space than cast iron of equal strength. End brackets are made from shallow castings to shorten the length of the motor. And the cooling system sends separate air streams over the end turns of the windings—a unique scheme that combines effective cooling with minimum bracket depth. Engineering like this creates room for more horsepower.

Control unit improved, too

Easily accessible, the control unit is built into the motor end of the Unirail. It's assembled, wired and tested before shipment. You benefit from (1) lower installation costs (2) easy replacement or alteration, due to standardization of control equipment, and (3) maximum protection for machine and motors because contactors open automatically if power fails. The motor can't start unexpectedly when power returns. The operator must press a button to restart each deck.

Maintenance men like this motor

This Westinghouse Motor has pre-lubricated, sealed ball bearings that require no further lubrication. There's no leakage of oil or grease to damage yarn. Lint accumulation is reduced, and cleaning becomes a less frequent chore. Suitable for all makes of twisters, this motor is typical of Westinghouse ingenuity in the textile field.

Next time call Westinghouse

When you have problems in drives for textile machines, call your nearby Westinghouse representative. Our engineers are experienced in textile problems and are available to help you. Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pa. J-94996

*Registered Trade-Mark

YOU CAN BE SURE...IF IT'S Westinghouse

for SHEER fire-fighting POWER

There's nothing like a Kidde Dry Chemical extinguisher for smothering fire fast. It's the only shielded nozzle dry chemical portable. That means you get the double advantage of a most effective extinguishing agent and a wide-spread, soft volume discharge that doesn't fan or drag along air. Even an inexperienced operator can attack a fire without fear behind the "cool" protective wall of dry powder that's set up. Just pick it up, point the horn, pull the trigger. Kidde Dry Chemical portables come in 5, 20 and 30 pounds. Write us today for full information.

Kidde

Walter Kidde & Company, Inc.,

890 Main Street, Belleville 9, N. J.

Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

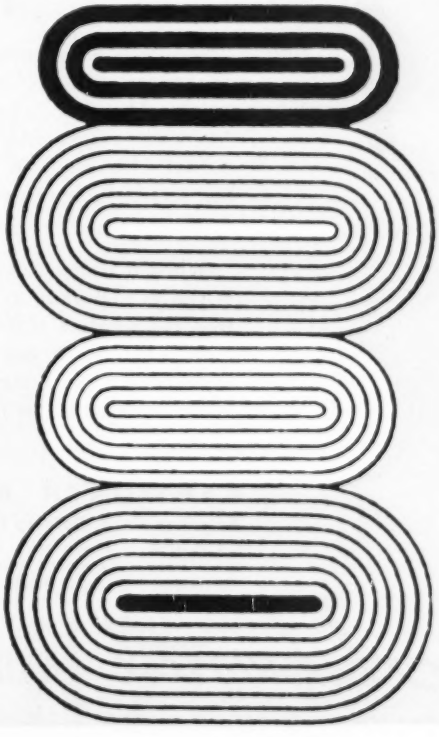
XYNO FINISH 9909

For *SOFTER* Resin-Treated Fabrics

The softest of finishes with the greatest of sewing ease is now possible with urea- and melamine-treated fabrics when they are treated with **XYNO FINISH 9909.**

Tested and proven through extensive use, **XYNO FINISH 9909** is a softener of superior effectiveness in every respect. It is extremely bath compatible with both anionic and cationic finishing materials as well as resins; offers strong resistance to yellowing at higher temperatures; does not affect light-fastness of normally susceptible colors; has excellent plasticizing action, and does not inhibit resin curing.

In every respect, whether applied in dyeing on box or jig, or in finishing on quetsch or pad, **XNYO FINISH 9909** gives the best results. Prove it with a sample, sent upon request with complete data.



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OIL & CHEMICAL COMPANY
TEXTILE DIVISION
WARREN & MORRIS STS., JERSEY CITY 2, N. J.
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For Export: ONYX International, Jersey City 2, N. J.

when the service is as important as the product

Service is an important value we seldom appreciate until we miss it. Just for example: How long before our elaborate "domestic engineering" departments went out of business – if we couldn't phone for service when needed, to keep them in trim?

When it comes to card clothing, service is just as important as quality – to ensure that the product is available quickly and conveniently, that you get the best type of clothing for your purpose, that efficient installation is near at hand, and that you'll have technical assistance promptly when you need it.

Ashworth Service is just as good as Ashworth Card Clothing – and that's the best. We have 3 factories, 6 repair shops and 7 distributing points—all strategically located in major textile areas. These assure an adequate supply, convenient repairs, and prompt deliveries.

Our practical card men are always on call – ready to give you technical service, survey your cards and recommend necessary repairs. Write to our nearest plant for full details of Ashworth Service.

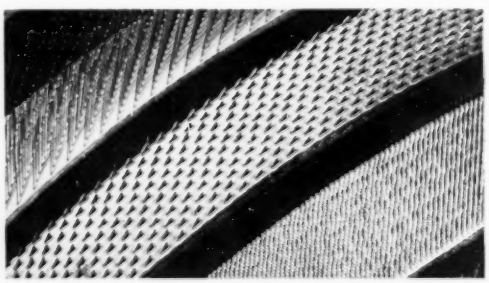
ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
Factory* Repair Shop† Distributing Point‡

Ashworth **CARD CLOTHING**

3 FACTORIES **6** REPAIR SHOPS **7** DISTRIBUTING POINTS



THE ORDER CALLED FOR:

Nylon reserve in a nylon-viscose cross-dye

The dyehouse delivered a perfect job, thanks to Sandoz' Technical Service

The Problem:

To reserve an acceptable shade of white in the nylon portions of the nylon-viscose checked fabric, while dyeing the viscose. The best of the so-called "Nylon-White" colors for viscose, as well as many of the usual products for reserving wool, silk and nylon, had failed to produce the desired effect.

Sandoz suggested:

Use .25% Resolin B paste in the bath along with the dyestuff and Glaubers salts for 1 hour at 200° F. An excellent white nylon was secured. Resolin B paste, an alkanapthalenesulphonic derivative, has the additional faculty of not damaging the light fastness of direct colors.

Out of this difficult problem it was also found that Sandoz Cuprofix Rubine FBL makes it easier for the dyer to produce deeper wine shades, as it is one of the best colors for dyeing viscose while reserving nylon.

Whenever you have a problem involving the treatment or dyeing of the new synthetics or blends, call on Sandoz' Technical Service. Our technical experts may be able to help you find a practical solution. There are Sandoz branches in Hudson, Mass.; Fairlawn, N. J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal and Toronto. Sandoz Chemical Works, Inc., 61 Van Dam Street, New York 13, N. Y. 3.3

SANDOZ

SANDOZ

THINKS AHEAD WITH TEXTILES

A Smooth Idea Pays Off . . . for You

Smoothness is the big reason why many textile mills use Synthane laminated plastics for the balloon separator blades on their twisting machines.

The hard, smooth surface of Synthane reduces abrading of the yarn. Should the blades, by chance, become scratched they're easy to repolish.

Smoothness is only one of the properties that make Synthane valuable throughout the textile industry.

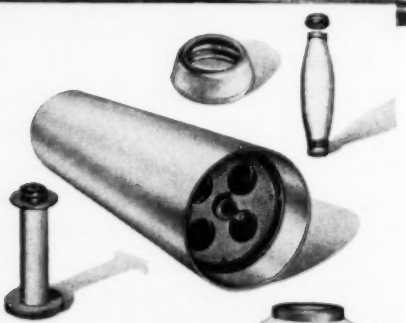
Bobbins machined from Synthane resist the action of yarn sizing solutions. Synthane's light weight makes starting and stopping of bobbins and pirns faster, uses less power. Dynamic balancing of bobbins reduces vibration. steps up allowable spindle speeds. Synthane's high compressive strength combats the crushing force of nylon yarn.

Furnisher rolls made from Synthane do not absorb moisture or dyes. Because Synthane weighs little, is dimensionally stable, strong and tough, and can be easily machined to a smooth, non-snagging finish, it is an ideal material for pressure rolls and measuring rolls.

Synthane products for the textile industry also include drier poles, dye sticks, caps for nylon sizing bobbins, high-strength headless package take-up tubes, caps for orlon and nylon shipping pirns, a new collapsible bobbin and many others.

Learn more about how Synthane can help you. Write today for your copy of the Synthane Textile Product Folder Synthane Corporation, 12 River Road, Oaks, Pennsylvania

Synthane—one of industry's unseen essentials



Furnisher rolls, pressure rolls, measuring rolls, nylon sizing bobbins and caps, headless package tubes, pirns, redraw caps, and hosiery turning and examining forms are a few of a long list of textile parts made from Synthane.

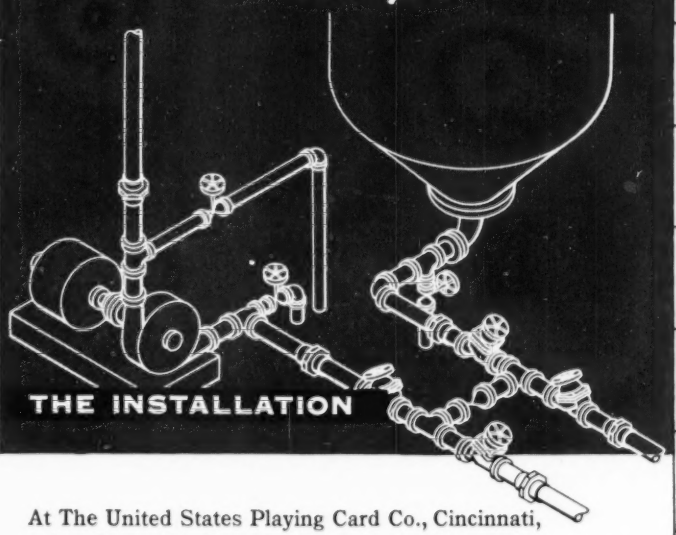
SYNTHANE

OAKS, PENNA.

LAMINATED PLASTICS

What a Difference in Valve Behavior ...on Heavy Coating Liquids

for example



At The United States Playing Card Co., Cincinnati, using Crane Diaphragm Valves in handling paper coating "enamels" from storage tanks to pumps.

VALVE SERVICE RATINGS

SUITABILITY:	None other like it
FEATURES:	Fluid can't get into bonnet
MAINTENANCE COST:	None
SERVICE LIFE:	No sign of wear after 3 years
OPERATING RESULTS:	Trouble and waste stopped
PRICE:	O.K. — no premium
AVAILABILITY:	Crane Catalog item No. 1610

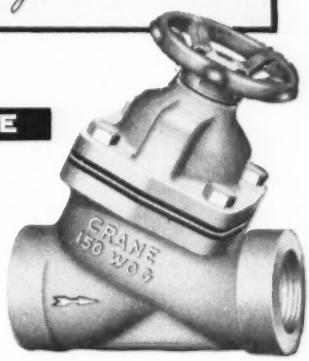
THE CASE HISTORY

Previously, ground plug cocks and conventional gate valves were used. During normal shutdowns the heavy coating liquid would build up on seating surfaces, in stem threads and working parts. The cocks and gates would "freeze up"; were hard to operate, couldn't be shut tight. Recurring maintenance, cleaning, and replacements were a costly, annoying problem.

Switching to Crane Diaphragm Valves solved the problem. Their sealed-to-fluid bonnet and soft disc insert did the trick. None of the 48 Crane valves installed beginning more than 3 years ago, has needed service of any kind. They continue to operate freely and easily.

THE VALVE

There are many more ways you can benefit by complete, dependable isolation of fluid and valve working parts. Crane Packless Diaphragm Valves are equally effective under corrosive conditions, and on erosive fluids—sludges, slurries, etc. They also keep your product contamination-free. Choose these valves to your needs from a wide variety of body, disc, disc-insert, diaphragm, and lining materials. See your Crane Catalog or local Crane Representative.

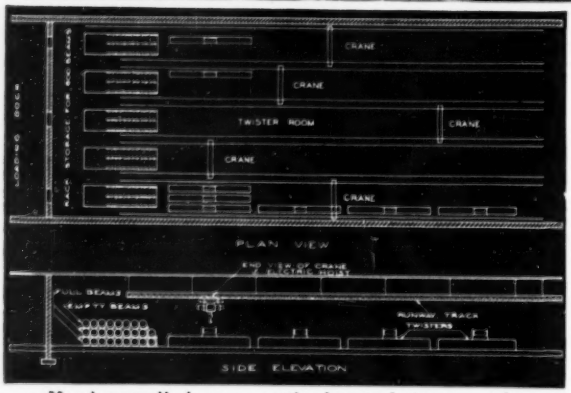


THE BETTER QUALITY...BIGGER VALUE LINE...IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING



Hand-propelled cranes with electric hoists provide complete handling service for the entire twister room.

In the ultra-modern twister room of the Excelsior Mills, Clemson, S. C. a Cleveland Tramrail system handles rayon beams from storage to twisting machines. Empty beams are returned on the same equipment.

It is a simple easy task for one man with the Tramrail equipment to convey a beam and set it in position on a twisting machine. Where required two or more beams can be mounted on a twister frame with equal ease. Tramrail equipment eliminates the need of floor trucks entirely and thereby removes a chief source of floor damage.

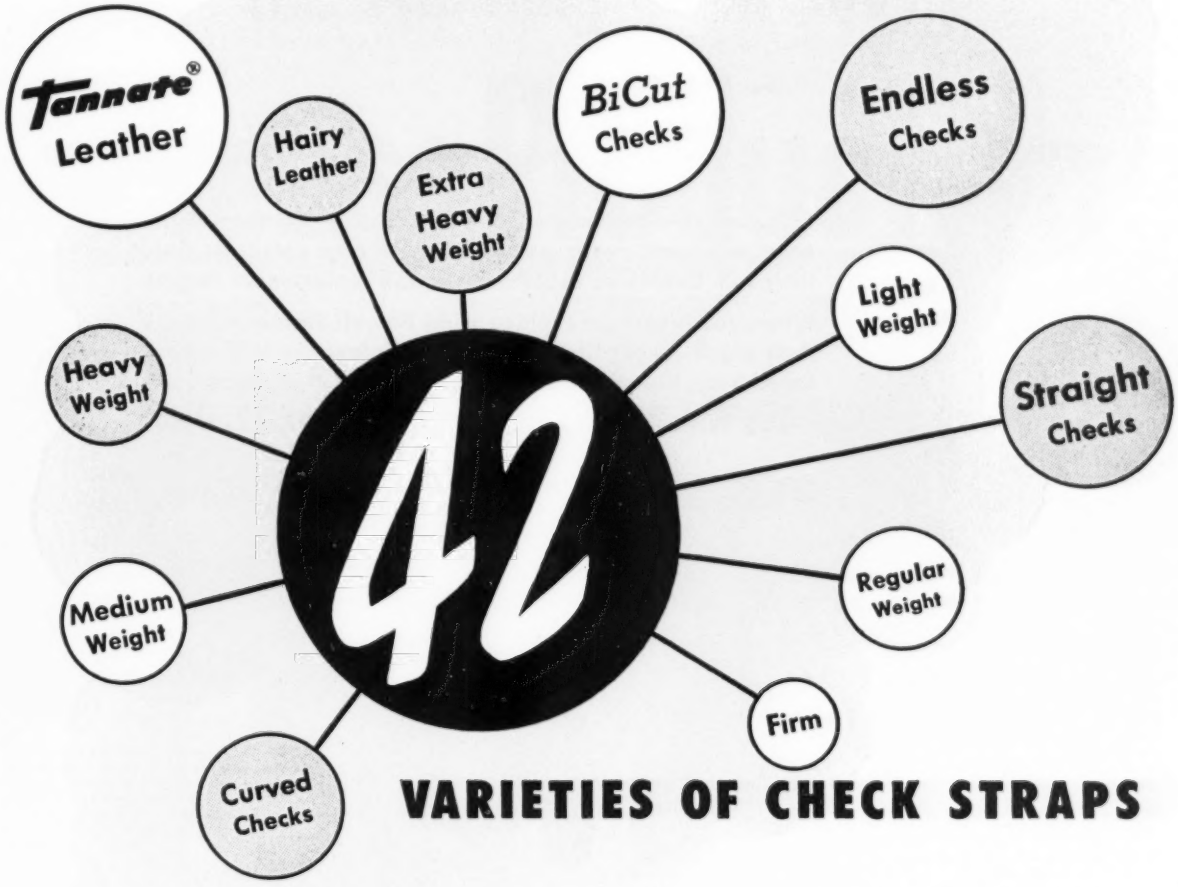
GET THIS BOOK!

BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
2865 EAST 287th STREET WICKLIFFE, OHIO

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

NOW, YOU CAN SELECT THE EXACT CHECK STRAP FOR BEST RESULTS



VARIETIES OF CHECK STRAPS

There's a Rhoads Check Strap to Meet Your Requirements! . . . Available in four styles (Rhoads patented BiCut, straight, curved and endless), two tannages (Rhoads exclusive Tannate Special Leather and the new Rhoads hairy leather), four weights (extra heavy, heavy, regular and light weight), and three degrees of firmness (firm, standard and mellow) all custom-cut to your specifications. Exclusive tanning and finishing processes build into Rhoads' check strap leathers the qualities you need for smooth, efficient loom operation.

Why Rhoads Makes 42 Varieties of Check Straps . . . Because we want to be able to offer you exactly the right check strap to meet the temperature and humidity conditions in your mill, the width of your looms, the cloth being woven, even the personal preferences of loom fixers. All these factors influence check strap efficiency which in turn, is important to the quality and continuity of production.

Direct Factory Representatives Insure Satisfaction . . . Our own force of experienced field representatives will be glad to assist you in the selection of the check straps best suited to your requirements. In this way, we can insure still further, your complete satisfaction with our straps. So get the complete story on Rhoads Check Straps now, before you place your next order.

Send for This Folder . . . Free of Charge . . . You'll want this folder because it outlines the complete specifications for each of the 42 check straps we now offer. It's something you'll want to keep, too, because it can be used as a handy desk or wall chart for quick reference.

For your *free* copy, call or write:

J. E. RHOADS & SONS
35 N. Sixth St., Phila. 6, Pa.

RHOADS

INDUSTRIAL LEATHERS

ATLANTA • PHILADELPHIA • NEW YORK • CHICAGO

Lower your costs by switching to Stainless Steel Valves

In many services in the Textile Industry, ordinary steel valves seem adequate — for awhile. But later on corrosive fluids take their toll. Excessive maintenance and replacement begins.

When you install (or replace with) Powell Stainless Steel Valves, their much longer life and lower maintenance will repay, many times over, the slight differential in the cost of these valves.

The Wm. Powell Co. Cincinnati 22, Ohio

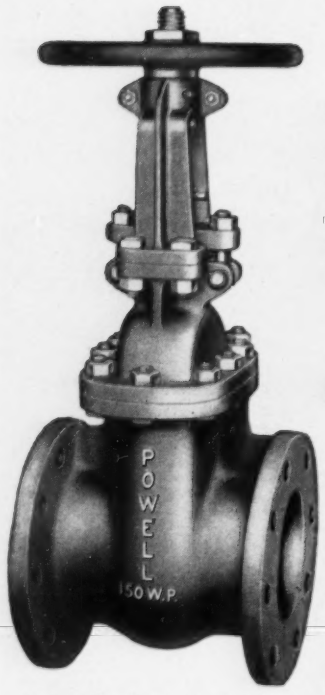


Fig. 2453-G — Large 150-pound Stainless Steel O. S. & Y. Gate Valve. Precision-fitted, accurately guided interchangeable solid or split wedge. Separable yoke arms in sizes 5" to 30", incl.

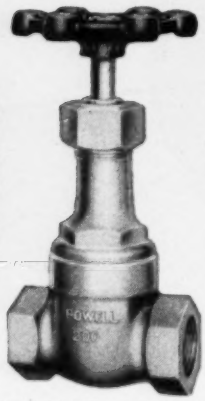


Fig. 1832—200-pound Stainless Steel Gate Valve with screwed-in bonnet. Sizes ¼" to 2", incl.

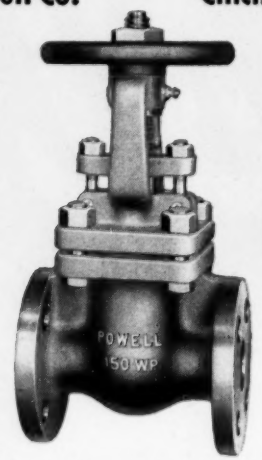


Fig. 2491 — 150-pound Stainless Steel O. S. & Y. Gate Valve with either solid or split wedge. Sizes ¼" to 2", inclusive. Also available with screwed ends.

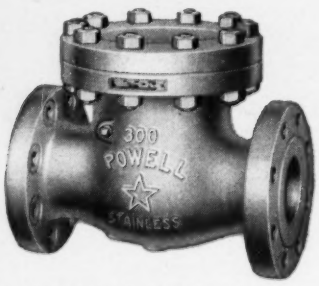
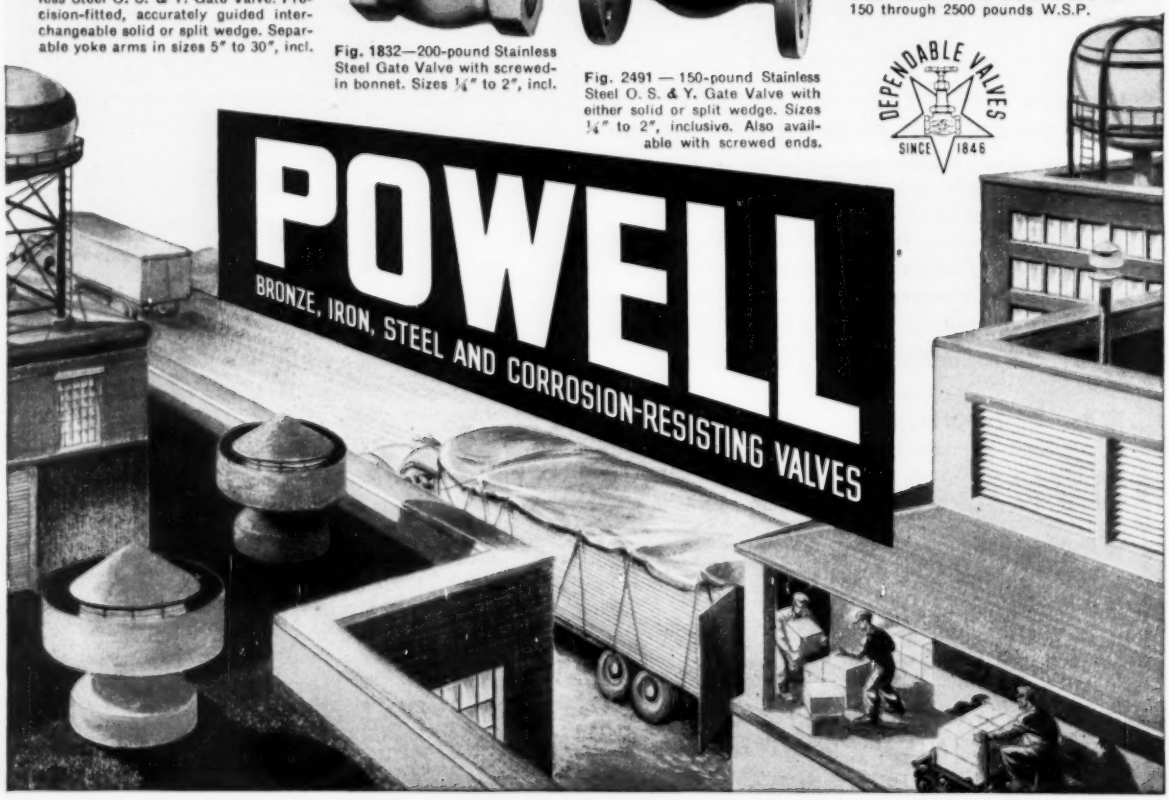


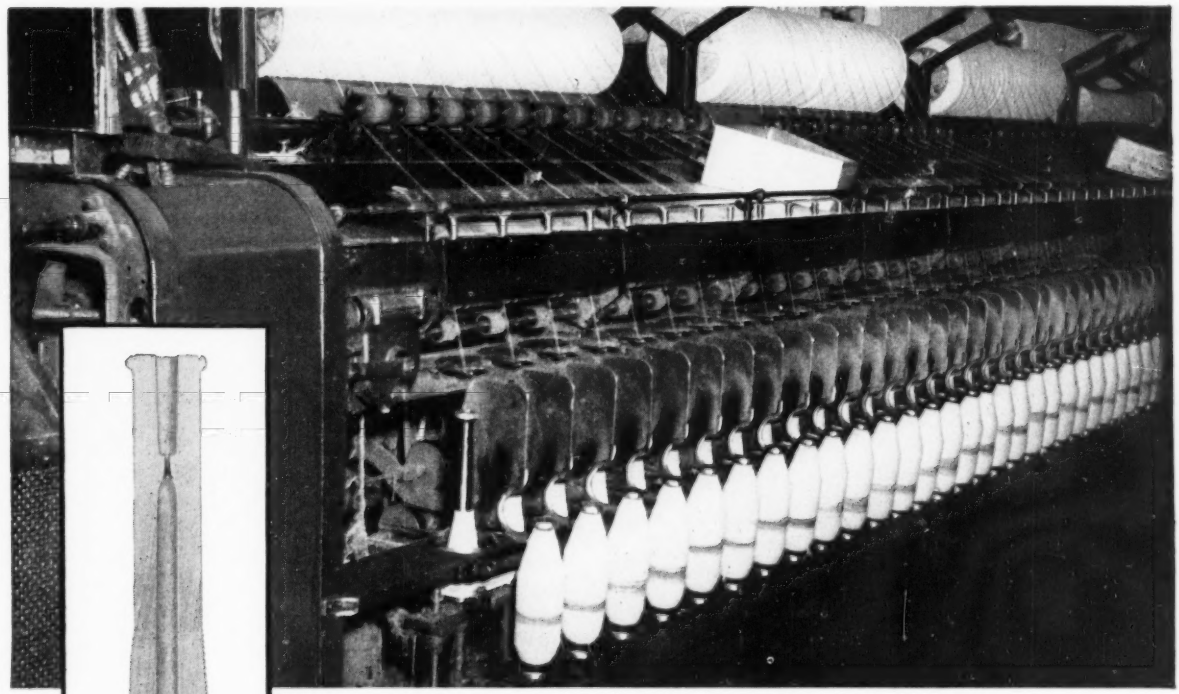
Fig. 3061 S. S. — 300-pound Stainless Steel Swing Check Valve. Made from a heavy steel valve pattern, it conforms to A.S.A. and A.P.I. Steel Valve Standards. These valves are available for 150 through 2500 pounds W.S.P.

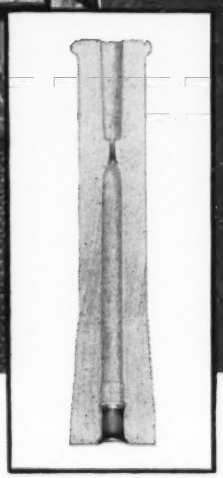
DEPENDABLE VALVES SINCE 1846



True, "Free-Running" Bobbins

Increase Production!





Cross section view showing machining details and bushings.

EXPERIENCED WORKMEN, ADVANCED METHODS AND QUALITY MATERIALS ASSURE LONGER "BOBBIN LIFE"

• You can depend on Vermont Spool and Bobbin for True, Free-Running Bobbins with less replacement costs, because Vermont Bobbins are made of seasoned hard rock maple. Each bobbin is tested for true free-running before leaving the factory. The bobbins are equipped with two uniquely crimped built-in brass bushings, one 2¾ inches from the top and one at the base of the bobbin. The center of each bobbin is reamed so that if the bobbin should swell, it will not grab the spindle.

Contact your nearest Vermont Spool and Bobbin representative and compare the advantages and the low cost with the bobbins you are now using. Further information upon request.

5 Features You Want

- **Longer Life**
- **True, Free-Running**
- **Brass Bushings**
- **Skilled Workmanship**
- **Competitive Price**

Vermont SPOOL AND BOBBIN CO.

234 SO. CHAMPLAIN ST. — BURLINGTON, VERMONT — *SUPERIOR SPOOLS AND BOBBINS SINCE 1906*

Lower your costs by switching to Stainless Steel Valves

In many services in the Textile Industry, ordinary steel valves seem adequate — for awhile. But later on corrosive fluids take their toll. Excessive maintenance and replacement begins.

When you install (or replace with) Powell Stainless Steel Valves, their much longer life and lower maintenance will repay, many times over, the slight differential in the cost of these valves.

The Wm. Powell Co. Cincinnati 22, Ohio

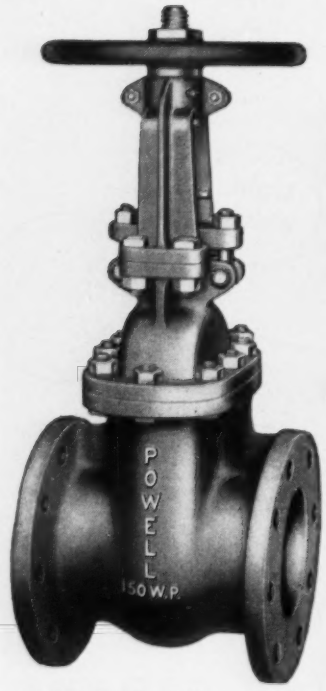


Fig. 2453-G — Large 150-pound Stainless Steel O. S. & Y. Gate Valve. Precision-fitted, accurately guided interchangeable solid or split wedge. Separable yoke arms in sizes 5" to 30", incl.

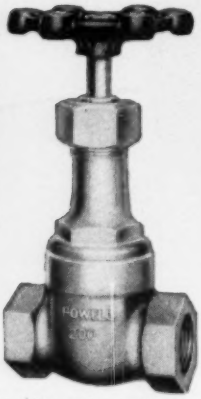


Fig. 1832—200-pound Stainless Steel Gate Valve with screwed-in bonnet. Sizes ¼" to 2", incl.

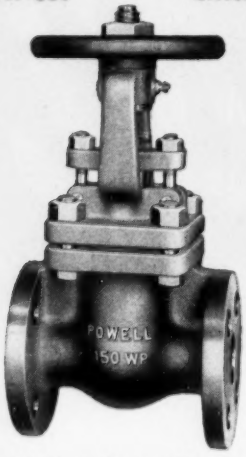


Fig. 2491 — 150-pound Stainless Steel O. S. & Y. Gate Valve with either solid or split wedge. Sizes ¼" to 2", inclusive. Also available with screwed ends.

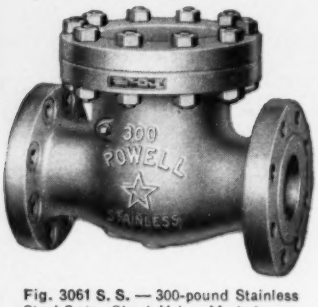
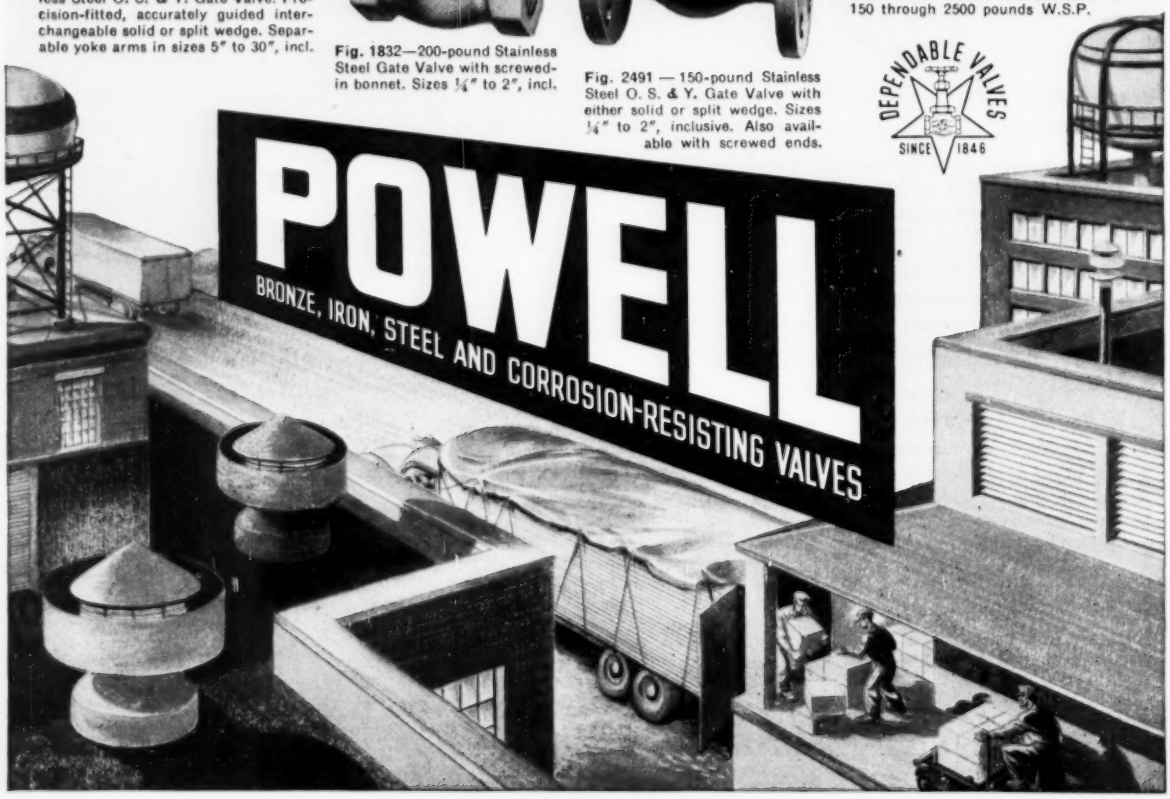
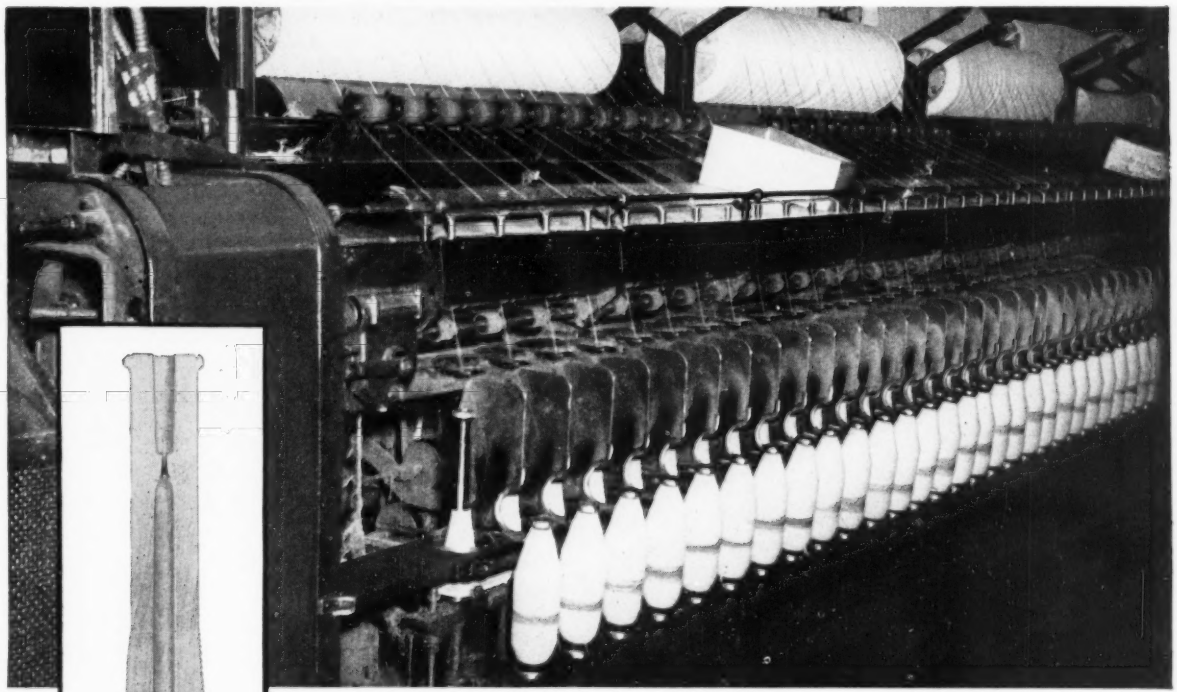


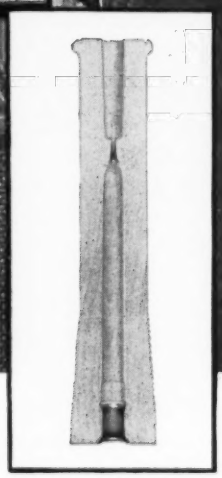
Fig. 3061 S. S. — 300-pound Stainless Steel Swing Check Valve. Made from a heavy steel valve pattern, it conforms to A.S.A. and A.P.I. Steel Valve Standards. These valves are available for 150 through 2500 pounds W.S.P.



True, "Free-Running" Bobbins

Increase Production!





Cross section view showing machining details and bushings.

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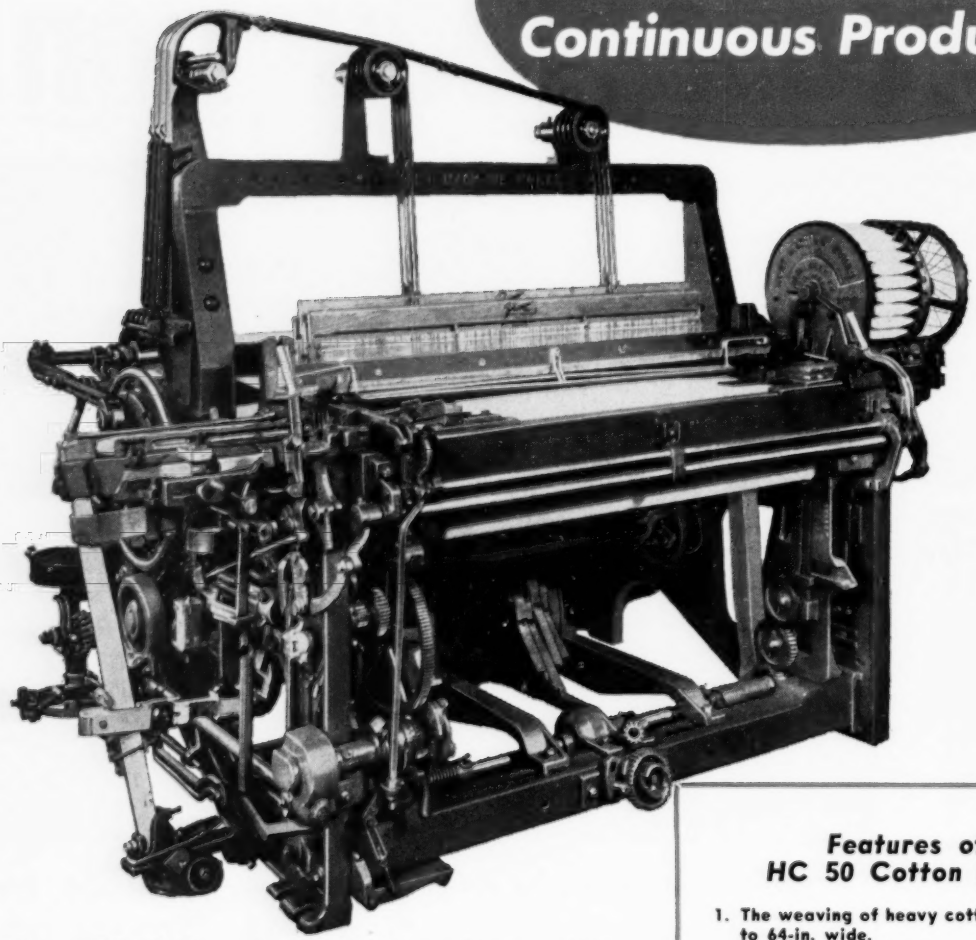
- **True, Free-Running**
- **Brass Bushings**
- **Skilled Workmanship**
- **Competitive Price**

Vermont SPOOL AND BOBBIN CO.

234 SO. CHAMPLAIN ST. – BURLINGTON, VERMONT — *SUPERIOR SPOOLS AND BOBBINS SINCE 1906*

The New HUNT HC 50 Cotton Loom Gives

High Speed Operation Continuous Production

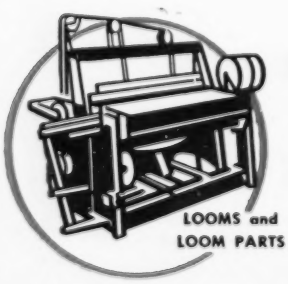


The new HC 50 Cotton Loom will give you faster production with many features that insure trouble-free operation. This new loom has heavy construction in the sides. It is equipped with the improved Hunt Spreader, giving proper alignment with four bearings on the crankshaft and two additional bearings on the camshaft.

Features of HC 50 Cotton Loom

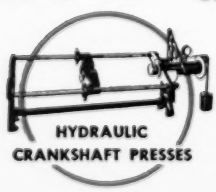
1. **The weaving of heavy cotton fabrics up to 64-in. wide.**
2. **The Hunt No. 8 individual motor drive with demountable gear.**
3. **Roll and shaft, or Brown spring-top harness motion, or 20-harness dobby.**
4. **A crankshaft diameter of 1⅜ in. A camshaft diameter of 1 15/16 in.**
5. **Single, double or center fork filling motion.**

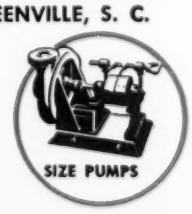
Write now for descriptive folder and further details.

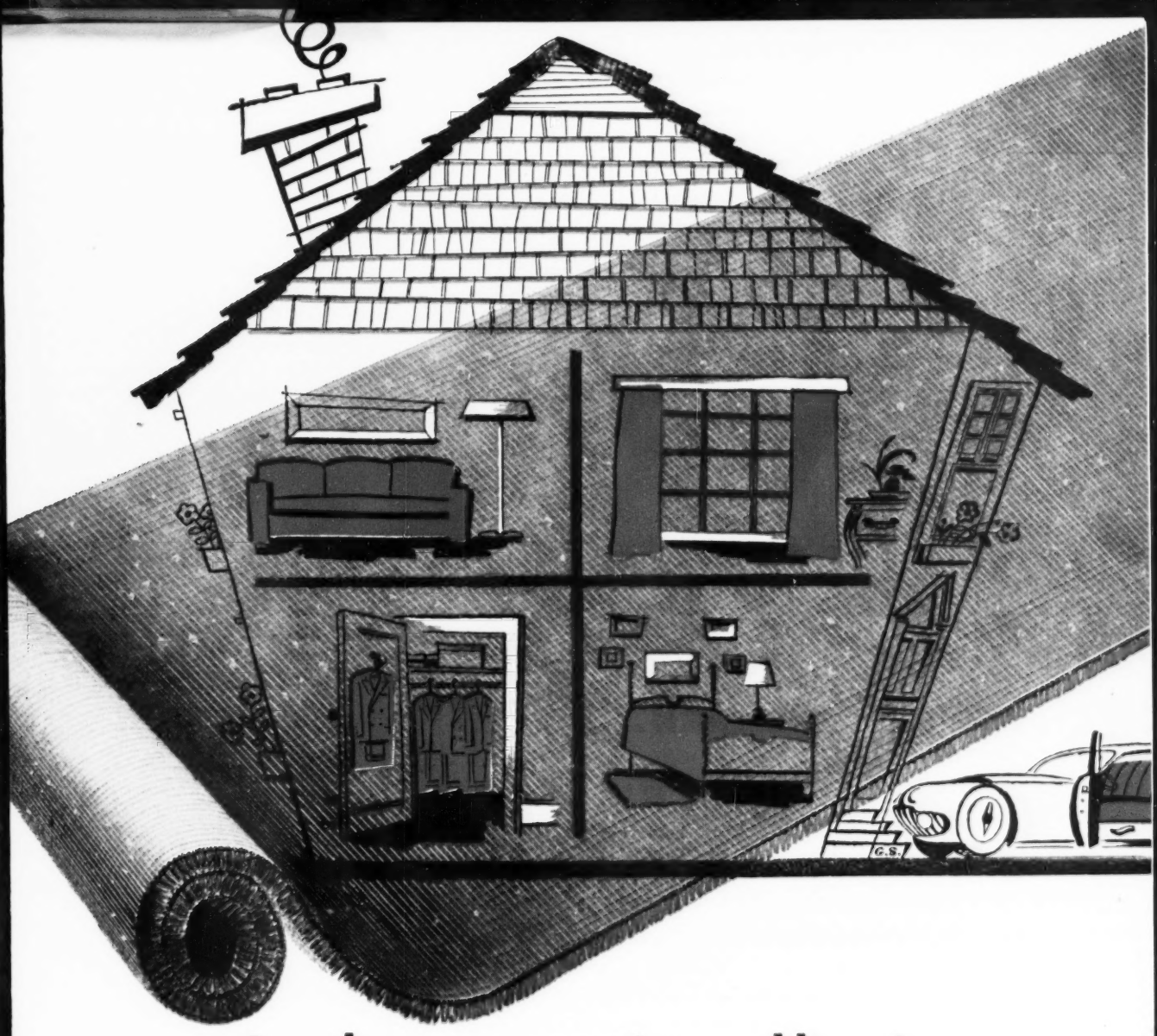


HUNT LOOM & MACHINE WORKS, INC.

**200 ACADEMY ST.
GREENVILLE, S. C.**







Are these your coating problems?

- **Dye discoloration and breakdown?**
- **Poor fabric body and strength?**
- **Difficult curing?**
- **Lack of clarity?**
- **Disagreeable odor?**

New Kralac makes them problems of the past! Especially developed by Naugatuck Chemical for coating and finishing both pile and flat fabrics, Kralac latex gives them a millful of wonderful new properties—quickly, easily, safely, surely.

New Kralac can be applied before or after dyeing—*ends* dye discoloration and breakdown!

It imparts excellent "hand"—improved locking, tensile, and tear strength—outstanding resistance to ravelling and staining.

You'll find Kralac has far superior clarity, too—**and it's as nearly odor-free as possible.**

What's more, Kralac gives high tensiles **without curing!** It needs no expensive and complicated equipment—can be applied by standard coating methods in mills everywhere!

Whether you manufacture carpets, other pile fabrics, flat fabrics for upholstery, drapery, sheeting, or fabric of any kind, you'll find Kralac can give your product finer, more lasting properties with ease and economy never before possible.

Find out how Kralac® can turn *your* problems into profits. Send the coupon below.

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NAUGATUCK, CONNECTICUT
Division of United States Rubber Company

BRANCHES: Akron • Boston • Charlotte • Chicago • Los Angeles • Memphis • New York
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Naugatuck Chemical, 31⁰ Elm St., Naugatuck, Conn.
Please send technical data on Kralac for textiles to:

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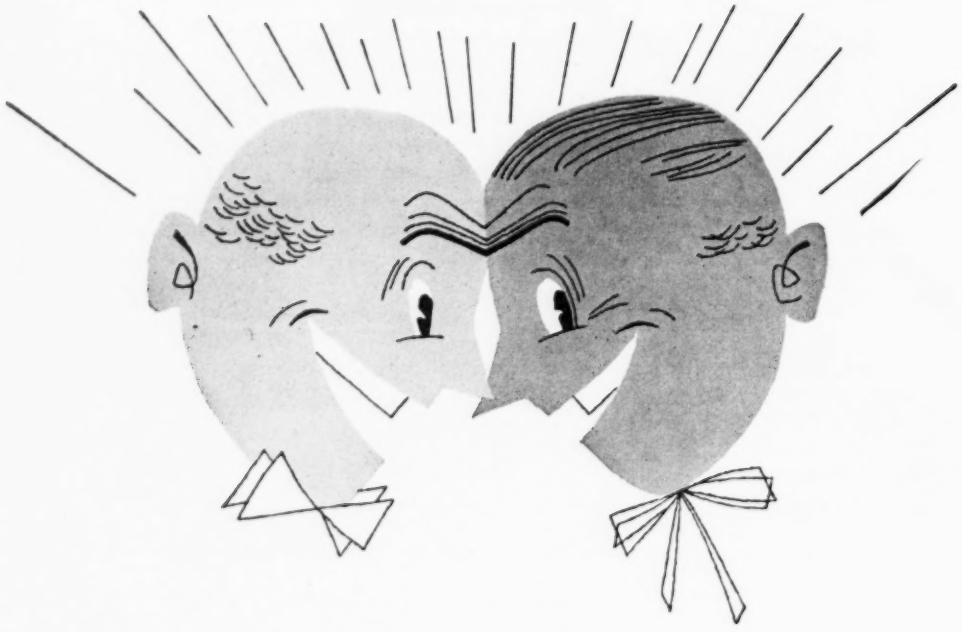
Title _____

Company _____

Address _____

City _____ Zone _____ State _____

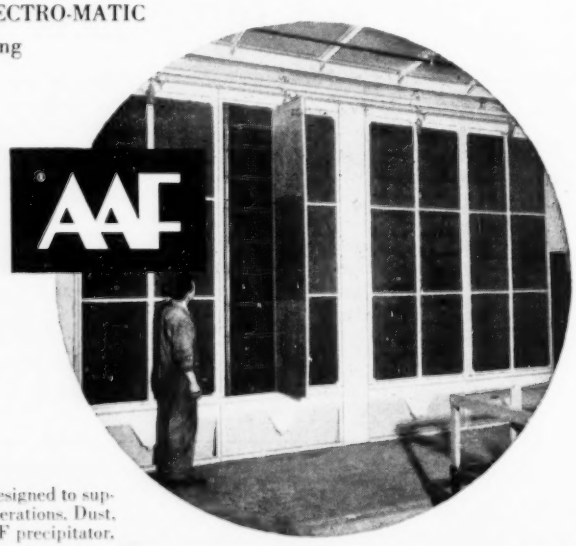


YOU SPIN THE YARN... *We'll Keep it Clean*

That's our business. We make the world's finest and only complete line of air cleaning equipment. We design and build this equipment to meet the ever-expanding needs of American industry. That's why we developed the ELECTRO-MATIC—a self-cleaning electronic precipitator that removes practically every trace of air-borne contaminants from the air—even smoke!

The ELECTRO-MATIC makes it possible to spin . . . weave and dye under ideal atmospheric conditions . . . free from discoloration. The value of the ELECTRO-MATIC has been proved in textile and hosiery mills the country over and has contributed greatly to the beauty and brilliance of today's delicately-hued fabrics.

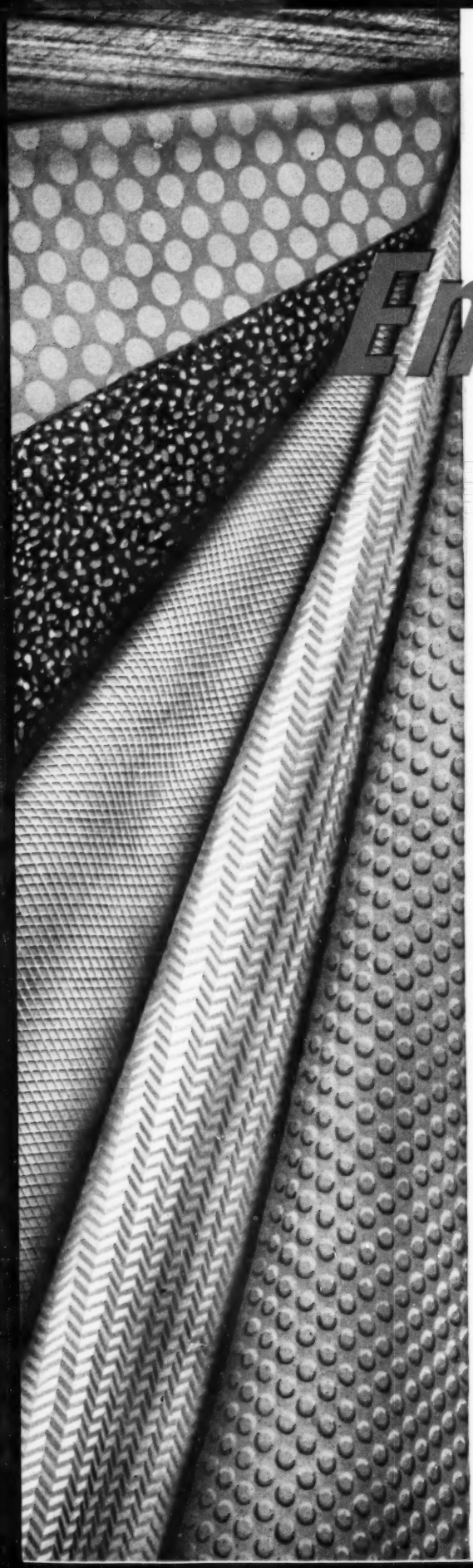
Write today for complete information on the ELECTRO-MATIC precipitator and how it will solve your air cleaning problems . . . economically and profitably.
Ask for Bulletin 250.



expect the best from

American Air Filter
COMPANY, INC.
275 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

Here is a rear view of an ELECTRO-MATIC precipitator installation, designed to supply a constant volume of super clean air for textile and hosiery mill operations. Dust, dirt and even smoke are eliminated by this exclusive, self-cleaning AAF precipitator.



Embossing

from plain to moiré
with one wonderful washfast resin

RHONITE R-I

For a wide range of calendered effects, from friction to deep embossing, from plain to moiré, RHONITE R-1 stands out among the new textile resins. Whether you use a plain, chasing, friction, Schreiner or embossing calender, RHONITE R-1 gives extra durability to the finish—even after repeated washings. Investigate the sure-fire way to put lasting appeal into all types of embossed fabrics with RHONITE R-1. Write us today.

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HOW TO INCREASE THE PRODUCTION...

In Your WINDING ROOM

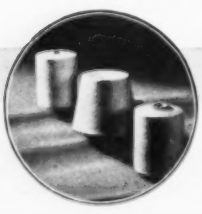
Have you changed to large packages in your spinning room, or are you planning to? If so, consider the possibility of increasing production in your winding room without placing an undue burden on the operators. Here's how it's done.

Suppose you have a 100 spindle Foster Model 102 (50 spindles to a side). Just add a section of 20 spindles (10 spindles to a side) and one girl can tend 60 spindles on one side, supplied by large bobbins, just as easily as she can tend 50 spindles on one side, supplied by small bobbins. Thus you increase your output without imposing on the operator and the investment is considerably less than if you installed separate new winders.

We have used the Foster Model 102 as an example, but the same principle applies to the Foster Model 75 or any other Foster winder.

Of course there is a maximum number of spindles per machine in each case, which varies with the traverse of the package.

If you wish to increase production in your winding room, consult with us to find out if it's practicable.

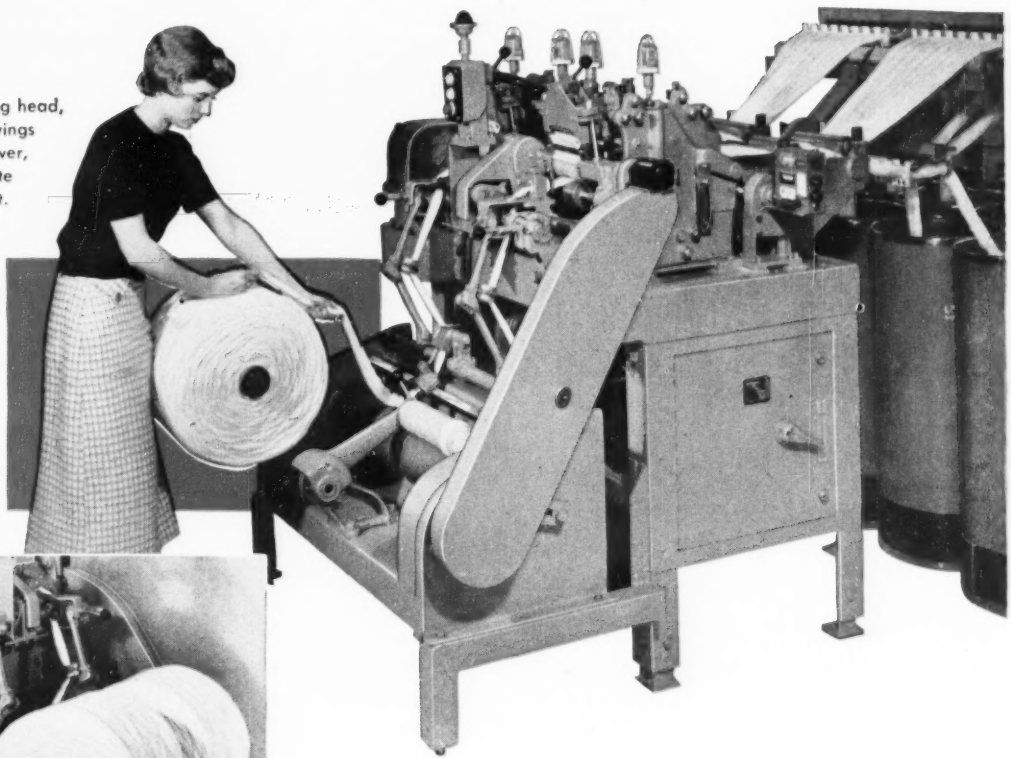


FOSTER MACHINE COMPANY • Westfield, Mass., U.S.A.

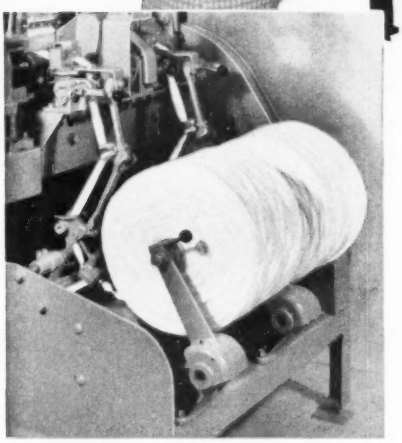
Southern office — Johnston Bldg., Charlotte, N. C. Canadian Representative — Ross Whitehead and Company Limited, 1475 Mountain St., Montreal, Quebec • European Representative — Muschamp Taylor Limited, Ashton-Under-Lyne, England.

NEW BALLING HEAD PIN DRAFTER

PRODUCES 3½ OZ. TOP—CUTS DOFFING TIME



● With new balling head, operator simply swings ball out, breaks sliver, and doffs ball. Note easy working height.



● Sliver is delivered to bottom of ball, imparting an undershot false twist to sliver.

Now 3½ oz. top direct from Pin Drafter with single meche balling head! Double meche unit delivers two 1½ oz. slivers to each ball. Eliminates subsequent operations previously necessary to produce this heavier sliver.

Cuts doffing time! Doffing is performed at convenient 28", table-height level. Sliver is delivered to bottom of ball—operator simply swings the delivery roll up and breaks sliver to doff ball.

Undershot false twist produces better quality top and a denser, neater ball weighing up to 21 lbs. for wool (higher for synthetics). Gives better drafting qualities on subsequent operation—more uniform ball unwinds freely.

Tension compensator assures sliver of uniform size over entire width of ball. Delivery arm traverses, rather than ball itself. Width of ball can be varied from 10" to 14". Maximum diameter 15½".

Adaptable to all dual delivery Pin Drafters.

Call in our Field Engineer nearest you for complete details!

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PRECISION MACHINERY SINCE 1880
TEXTILE MACHINERY DIVISION

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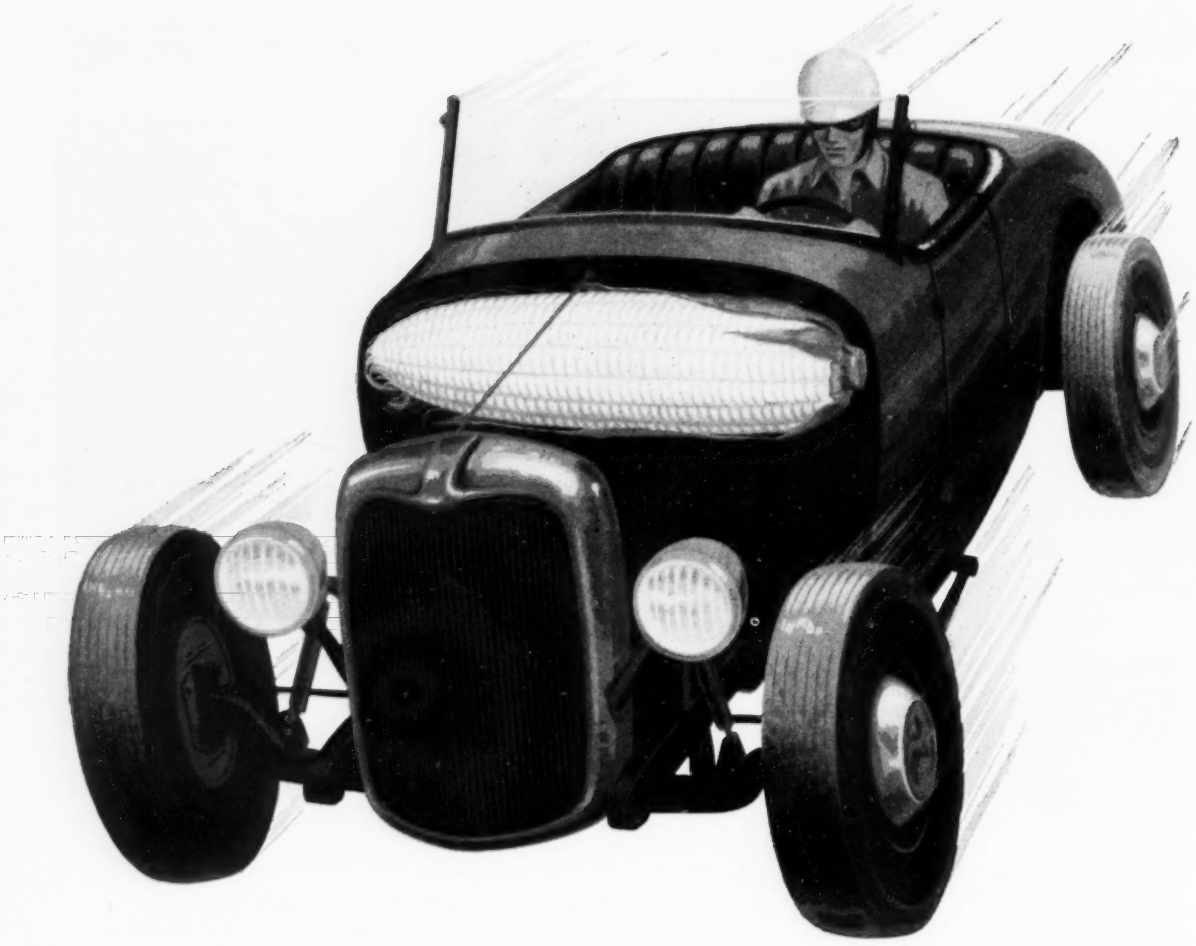
YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

what's **corn** doing hitting "70" down the pike?



CORN PERFORMS VITAL FUNCTIONS . . . IN MANY UNEXPECTED PLACES

Under the hood of your car for instance...derivatives of corn were used in casting the cylinder heads . . . also in extracting (from its oxide, alumina) the aluminum used in the pistons and other essential parts. This is but one of the numerous examples of how continuous basic research in corn helps American industry . . . helps you.

CORN PRODUCTS IN TEXTILES

For the textile industry Corn Products Refining Company supplies a variety of specialized starches, gums and dextrins . . . recommended ingredients for many textile processes.

We offer quality in volume supply unexcelled in the field. Complete technical service is available without cost or obligation. If you have a production problem why not check with Corn Products. We welcome your specific technical inquiries.

Manufacturers of
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brand dextrins, gums
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brand starch
EAGLE®
brand corn starch

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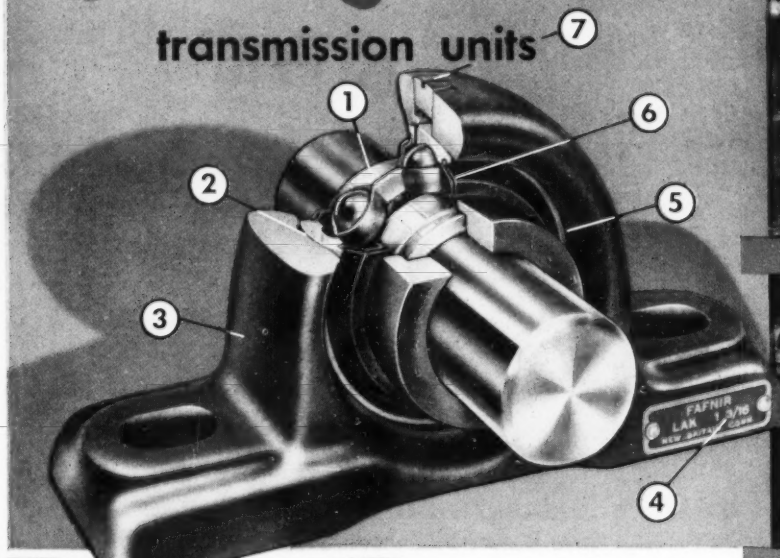
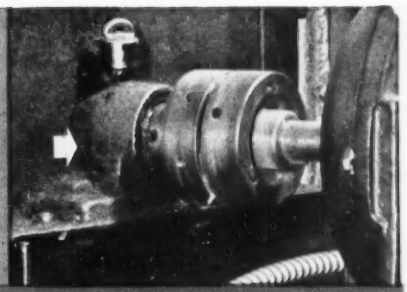
get these

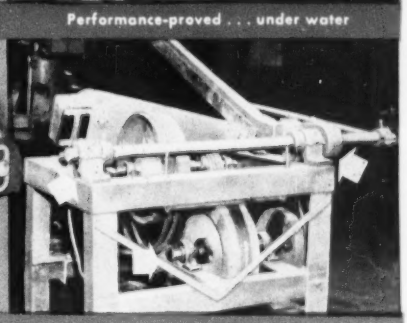
Performance-Proved Advantages in power transmission units



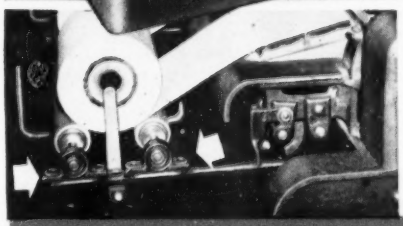


Performance-proved . . . 21 years of service

Performance-proved . . . under water

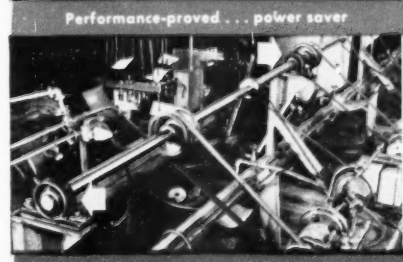


Performance-proved . . . under heavy loads



Performance-proved . . . drip free operation

Performance-proved . . . power saver



Performance-proved . . . lubricant saver

1. Fafnir-originated wide inner ring ball bearing with self-locking collar — easiest of all to install.
2. Self-aligning — spherical O.D. of bearing mounted in corresponding spherical housing seat provides unrestricted self-alignment.
3. Compact, rugged, one-piece housing provides complete support for bearing. Can be mounted in any position.
4. Wide range of types and sizes. Standard series illustrated, sizes from ½" to 2 7/16".
5. Bearing may be easily removed and replaced if necessary.
6. Integral, frictionless Mechani-Seals — keep lubricant in, contaminants out.
7. Pre-lubricated with provision for relubrication.

The Fafnir Bearing Company, New Britain, Conn.

FAFNIR

BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

TENNESSEE EASTMAN COMPANY
Division of Eastman Kodak Company,
260 MADISON AVENUE, NEW YORK 16, N. Y.

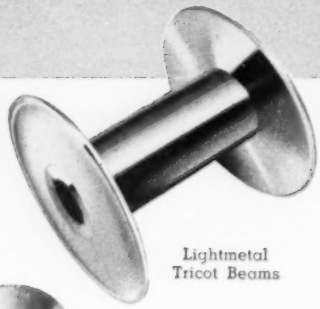
Why do these leading textile mills specify HAYES LIGHTMETAL BEAMS?

ENKA RAYON

Burlington Mills
"Woven into the Life of America"

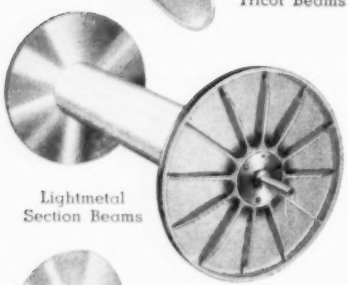
Avisco® Munsingwear® HOLEPROOF Celanese® ACETATE

3M COMPANY



Lightmetal Loom Beams

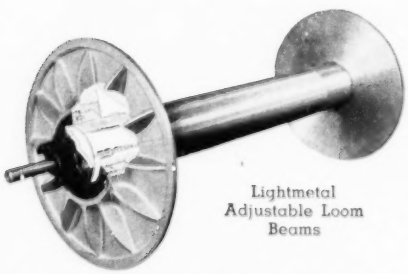
Lightmetal Tricot Beams



Lightmetal Section Beams

These textile mills choose Hayes Lightmetal textile beams because of their true-running, perfect balance, smooth surface and minimum maintenance requirements. For your answer to smooth, high-speed production, better selvages and a minimum of rejects, specify Hayes Lightmetal Beams. Write for complete information on specifications, costs and deliveries.

Lightmetal Replacement Loom Beam Barrels



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HAYES *the world's largest producer of light metal beams*
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Permits exact quality control of yarn, roving or sliver

THE CHART RECORDS made by the Brush Uniformity Analyzer* provide a *numerical evaluation* of the uniformity of the material. This eliminates guesswork and helps you control quality exactly.

With this instrument, originally designed by the Institute of Textile Technology, you can grade yarn, roving or sliver at high speeds. Checking a 1000-foot sample takes little more than three minutes, a fraction of the time required by other methods.

The charts are available immediately and provide a permanent record of tests. In addition, the average cotton count or the average percentage non-uniformity is shown on the meter.

A staff of textile-trained engineers is available to assist you in application, service, and evaluation of data. In southeastern states our representative is W. A. Brown and Associates. For complete information, write Brush Electronics Company, Dept. T-8, 3405 Perkins Avenue, Cleveland 14, Ohio.

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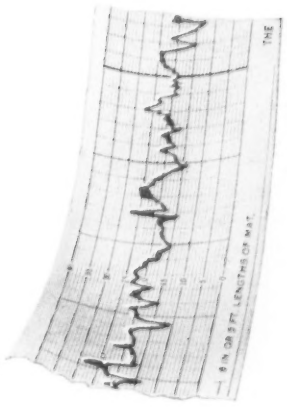

This sample chart of roving indicates gross deviation from nominal weight per unit length. The chart indicates irregularities as short as ½ inch in a length of yarn.

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Many mills report weaving efficiencies up as much as 1 to 3%.

All report that savings in starch, steam, cooking time or reduced labor alone pay for the installation of a Gaulin Homogenizer.

Present installations include machines for cotton, worsted and rayon sizes.

If higher weaving efficiencies and lower size preparation costs interest you, write for the full facts on Gaulin guaranteed performance, today.

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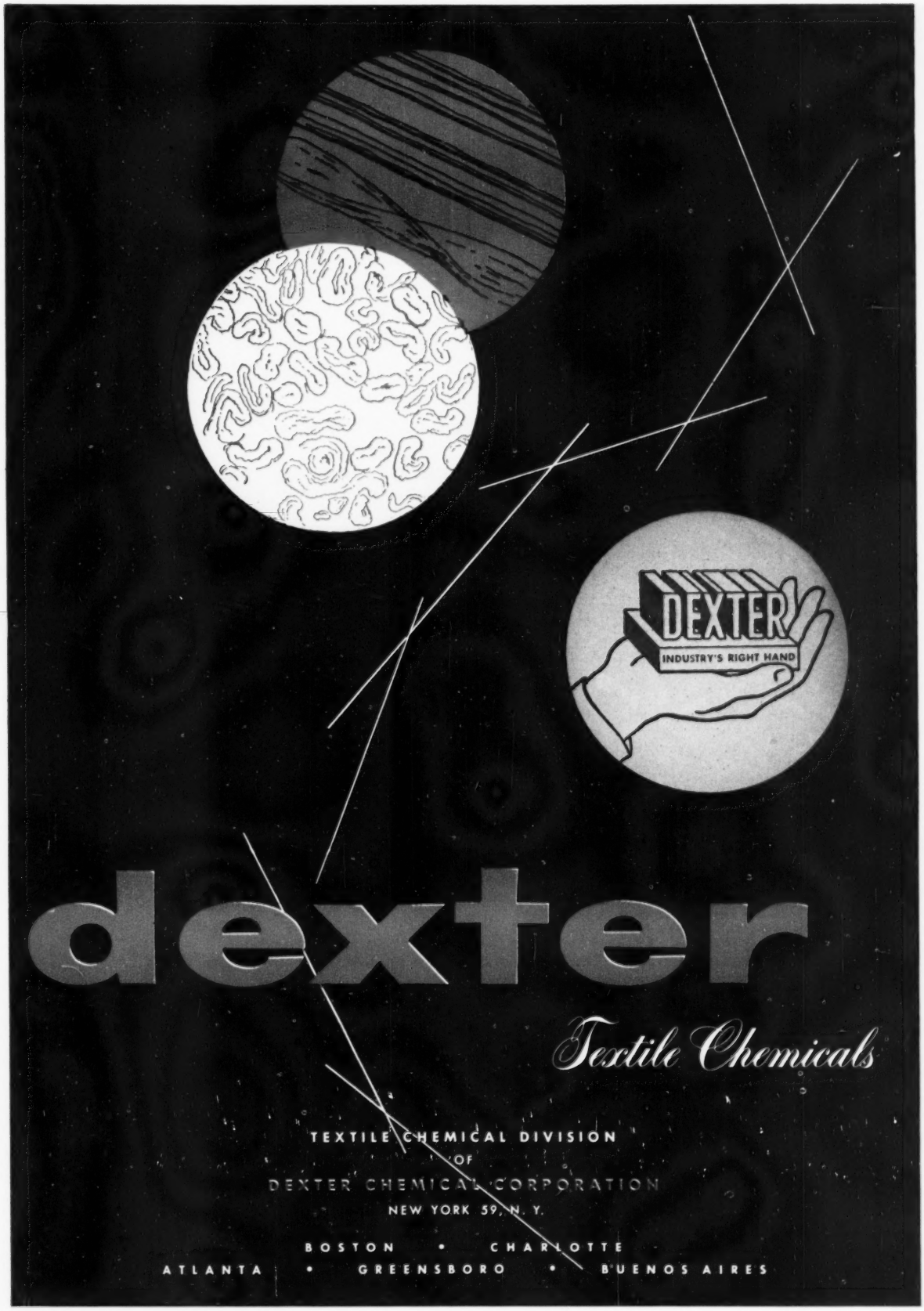
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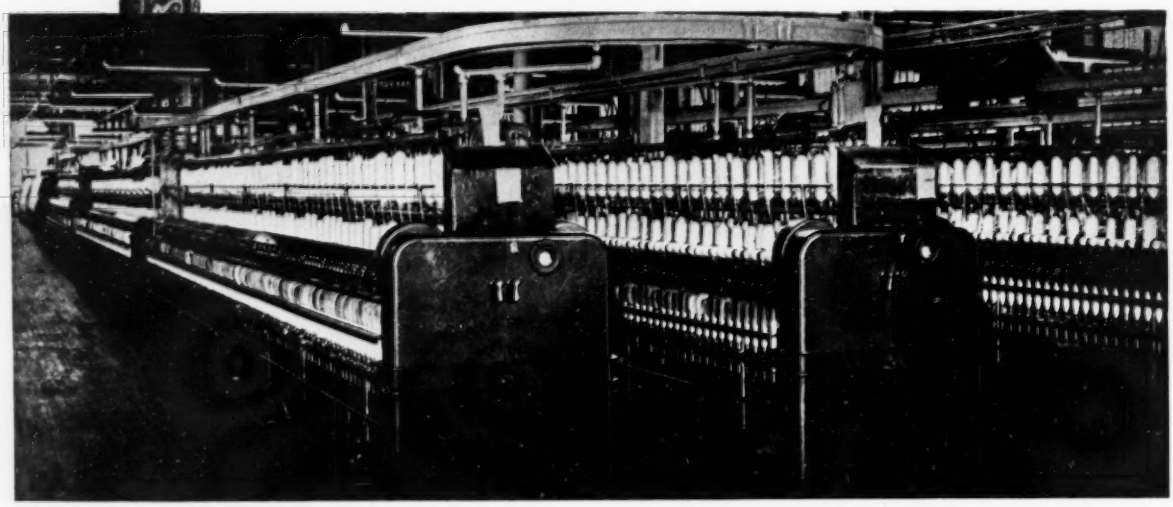
"We CUT MAINTENANCE COSTS by 13%"

... says Norman Garlington of Brookside Mills, Knoxville, Tenn.



To turn out 15 million yards of cotton and blended fabrics yearly, Brookside Mills keeps its 65,000 spindles and 1046 looms working smoothly with Sinclair Textile Lubricants.

Two years ago, General Superintendent Norman Garlington called in a Sinclair Lubrication Engineer and asked him to make recommendations for better and more economical lubrication.

After a thorough study of the mill, the Sinclair Engineer set up a comprehensive and simplified lubrication procedure and recommended specially developed Sinclair Textile Lubricants.

Since the new procedure was adopted, Mr. Garlington reports that, "Sinclair Textile Lubricants have cut our maintenance costs by 13%. In addition, we have *reduced* inventory . . . *saved* storage space . . . and *cut* misapplication."

About important extra services, Mr. Garlington writes, "The Sinclair Research Laboratory has been consulted on several tough problems and results were quickly obtained."

To get in touch with a Sinclair Lubrication Engineer, call your local Sinclair Representative or write to Sinclair Refining Company, 600 Fifth Avenue, New York 20, N. Y.

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. . . In a word—the answer is *service!* I mean sales service, delivery service, technical service.

Take delivery as an example. When I order textile processing chemicals from Solvay, I know I can depend on Solvay's efficient delivery service—from three convenient plants and over 200 stock points.

Occasionally, I run into a technical problem. Now here's where Solvay really shines, with an *exclusive textile* Technical Service that gives me the services of textile specialists—men who are experts in the textile business.

Yes, I have good reason for going to *Solvay first* for these textile processing chemicals."

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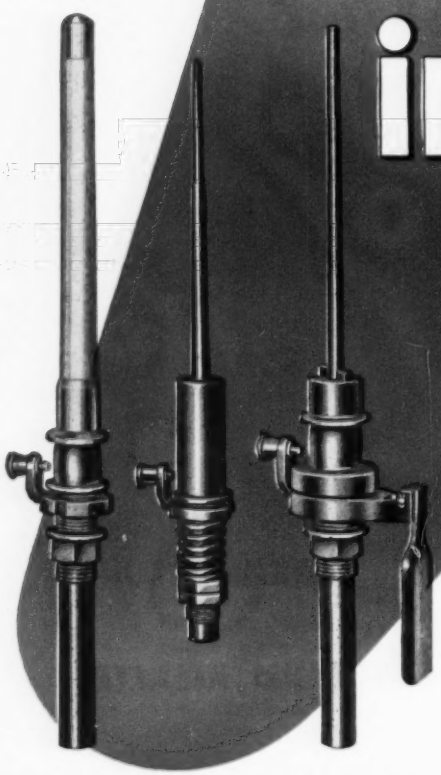
Marquette

ROLLER BEARING SPINDLES

with FULL-FLOATING FOOTSTEP BEARING

Millions in Use



Marquette Spindles offer you low initial cost, low maintenance cost and efficient operation at high speeds.

FOR ALL *TEXTILES* : COTTON • SYNTHETICS • WOOL • WORSTED

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Textile Industries
for August, 1953

News in Brief

Competition from Hosiery Waste. An official of the American Federation of Hosiery Workers, AFL, has advocated creation of a cooperative purchasing agency, designed to buy up hosiery mill waste goods. Asserting that dealers in waste goods are operating a lucrative business repairing mill thirds and irregulars and selling them as cut-price first quality goods, the official called upon hosiery mills to protect the hosiery industry from competing with its own waste material.

New Loom to Come. Hunt Loom and Machine Works Co. Inc., Greenville, S. C., is scheduled to produce a loom designed by Borden Mills, Inc., Kingsport, Tenn. The loom will be designated H-B Model No. 3, according to an official of the Greenville concern.

Product-Development Here. Elmer L. Ward, president of the Goodall-Sanford Co., Inc., told the graduates at the Philadelphia Textile Institute in June that " . . . we are just at the beginning of product-development in textiles, and I know as a merchandiser that consumers do not buy things—they buy the benefits they derive from things."

Bewitched, Bothered, and Bewildered. "The rate of generation of new possibilities in synthetic fibers, in converted old fibers, in plastics and solid film materials, in new methods of web fiber formation, and in many new methods of conversion of fabrics using resins and metals is so great, so rapid, and so overpowering in complexity and quantity that no longer is it even a remote possibility for the research chemist or engineer to predict, test, or determine even an important part of the effect on real value to the consumer of the changes brought into potential by the volume of newness within his immediate grasp," said A. G. Ashcroft, vice-president, Alexander Smith, Inc., speaking at Penn State recently. Consequently, it is a mental, physical, financial, and economic impossibility to perceive new textile products by testing and limited trial and experience. The days of standards, of specified values, of consumer protection against substitution are gone.

Welcome South Sister. Guest speaker at the 70th semi-annual convention of the National Association of Woolen and Worsted Overseers was J. Stursberg, president, Livingston Worsted Mills, Inc., of Holyoke, Massachusetts. Mr. Stursberg, speaking on the subject of "Why We Are Not Going to Move South," presented what to him was a most valid reason. Said he, squaring his shoulders: "My wife doesn't like the South." The wives of owners and operators of mass producing woolen flannel or worsted serge mills in the North might have to make the pilgrimage because of southern competition. However, Mr. Stursberg assures that mills producing fine wools, blends, synthetics, and similar high quality goods won't be on the casualty list.

Plant Expansion and Replacement. Computed replacement requirements for plant and equipment, at constant (1953) prices and assuming that present installa-

Extra Touch Planned for Atlantic City Show to Give It Plus Value

In addition to the progress in textile machinery, equipment, and supplies which may be seen at the forthcoming (April 1954) Atlantic City Show, special days will be featured to point up the machinery industry's relation to other groups during the 5-day American Textile Machinery Exhibition. "Association day" will honor the top officers of the textile trade associations; a forum will feature nationally prominent men who will discuss subjects closely identified with the textile industry's progress; "research day" will see the research directors of participating companies on hand to answer specific questions; and "textile career day" will be in special recognition of textile students. Mill executives who wish to arrange hotel space for themselves and their key men may write now to Albert C. Rau, Campbell-Fairbanks Associates, 322 Park Square Building, Boston, Mass., for application blanks for hotel accommodations, then file them with the Convention Housing Bureau, 16 Central Pier, Atlantic City, N. J., through which all hotel space requests must be placed.

"These large packages from the new Whitin 12" x 6½" Roving Frames are certainly cutting down our card room costs!"
"You're right, Jim, and our spinning costs are cut even more!"

For making large roving packages containing approximately 53 oz. of roving, Whitin now offers a 12" x 6½" Roving Frame.* To mills running 1.00 H.R. or coarser, it offers many advantages and substantial reductions in manufacturing costs.

Large roving packages require less doffing; material handling is also lessened. Both of these factors improve Card Room efficiency. More important are the savings that are made by reducing creeling time and costs in spinning. The 12" x 6½" bobbin holds approximately 100 per cent more roving than the 10" x 5", and its use lowers creeling costs by approximately 45 per cent.

Why not investigate now and make the savings that many other mills are getting with these Whitin 12" x 6½" Roving Frames. For complete details, consult your nearest Whitin Representative.

** Available with Whitin Regular Draft, Inter-Draft or Long Draft*

Whitin MACHINE WORKS

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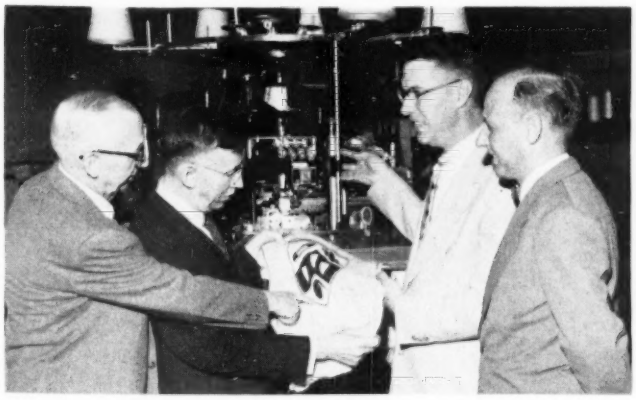


Two Gifts for PTI

A gift of $5000.00 from the Knitted Outerwear Manufacturers Association, Pennsylvania District, and a new jacquard knitting machine donated by the Jacquard Knitting Machine Company, Inc., Philadelphia, were formally presented to the Philadelphia Textile Institute at a recent ceremony at the college.

On behalf of the Outerwear Association, David Rosenblatt, treasurer of the Association, presented a check for $5000.00 to Dr. Richard S. Cox, Treasurer of The Philadelphia Textile Institute Foundation Development Fund. Charles Miller, vice-president of the Jacquard Knitting Machine Co., then officially presented the circular knitting machine to Rinaldo A. Lukens, Institute president, who accepted on behalf of the college.

In the photo looking at a sample sweater made by students at the college on the new knitting machine are (left to right): Mr. Lukens; John Naab, head of the PTI knitting department; Mr. Miller; and Richard C. Dott of Jacquard Knitting Machine Co.

tions will have a growth rate of 3 per cent per annum, indicate a climb in 10 years (by 1963) to $23 billion.

Increase in Foot Troubles. Foot troubles of a serious nature are on the increase in the U. S., especially among women and children. This is attributed to the habit of many women going without hosiery during the summer and the fact that many children are allowed to wear outgrown hosiery or shoes. These facts were developed in a recent survey made by the National Foot Health Council, headquarters at Rockland, Mass.

Corduroy Council Formed. A new trade organization, to be known as the Corduroy Council of America, is announced with offices at 15 East 53rd Street, New York. The purpose of the organization is to help manufacturers in all trades and in all markets as well as the retailers of America by promoting a greater use and acceptance of corduroy in all fields and in all seasons by the consumers of America. The entire corduroy industry has been invited to participate in this program.

New Name for Lowell Textile. On May 25, Governor Christian A. Herter of Massachusetts signed the bill which changes the name of Lowell Textile Institute to its new designation, "Lowell Technological Institute of Massachusetts." The new name is the one which received the favorable votes from a large majority of the Institute's trustees, alumni, faculty, and undergraduates when they were polled several months ago. Departments of Leather Engineering and Paper Engineering have now become well established at the Institute, and new departments of Electronics and Plastics are in prospect for the near future.

USDA Patent on Cotton Cleaner. Public patents have been allowed the U. S. Department of Agriculture in the name of Charles M. Merkel and associates on a device known as a "recipro-cleaner" for cleaning cotton during the ginning operation. Built in as a part of the gin stand commonly used in all upland seed-cotton ginning, the cleaner requires no additional machines for this operation and little additional power. Mr. Merkel is engineer in charge of the U. S.

Tentative ASTM Wool Tests

In its report presented at the recent 56th annual meeting of the American Society for Testing Materials, Committee D-13 on textile materials recommended the following four methods for publication as tentative:

(1) Average fiber diameter of wool tops by porous plug tester;

(2) Alkali solubility of wool;

(3) Relaxation and felting shrinkage in laundering of stabilized knit wool fabrics;

(4) Tests and tolerances for yarns containing wool.

Also proposed were revised tentative methods of testing and tolerances for rayon tire cord.

All of these tentative methods have been approved by the sponsoring committee and accepted by the Society in accordance with established procedures, for use pending adoption as standard. Suggestions for revisions should be addressed to the Society at 1916 Race St., Philadelphia 3, Pa.

down time...

is money lost!

For 40 years, Jenkins Metal Shops have served the textile industry with highest quality, *dependable* parts—and the advantages of Jenkins dye-cut and dye-formed, Dynamically Balanced Cylinders, card screens of new, improved grid-bar design and other Job Engineered products are well known throughout the trade.

Down time costs money. Jenkins quality products will save you money in 1953.

JENKINS METAL SHOPS, Inc.

GASTONIA, NORTH CAROLINA

Cotton Ginning Laboratory at Stoneville, Miss.

Management Attitude in Canada. The average Canadian manager is likely to accept more readily many scientific management techniques than is his U. S. counterpart. The reasons for this are many, but the most important is: Canadians have been able to watch mistakes made by U. S. industry, according to George H. Elliott & Co., management consultants.

Research Personnel and Costs. A survey made in mid-1952 covering 2,000 companies engaged in scientific and engineering research and development revealed the following about the "textile mill products and apparel" field:

Number of supporting personnel for each professional reported —1.6

Cost of research—$15,817,000

Proportion of research cost financed by federal government—14.4%

Cost of research as a percentage of sales—.9%

Average cost per research engineer or scientist—$19,200

Annual separation rate of research engineers and scientists per 100 professional employees—13.8.

New Chemical Compound for Fibers. Development of a chemical compound which can be made in the form of a textile fiber has been announced by Dr. Emmette F. Izard, Du Pont research chemist. Called polyethylene terephthalate, the substance is said to be far superior in many respects to cellulose acetate which has comparable uses and applications.

To Reclaim Military Canvas. ODM has invited textile manufacturers in the Southeast to participate in a facility expansion program calling for the reclaiming and rehabilitation of damaged military canvas products. The following operations would be involved: Thorough cleaning to remove previous impregnation, dirt, oil, paint, and any other materials foreign to new untreated canvas; repair of the product, including replacement of all ropes, worn eyelets, worn leather fittings, windows, repanelling to replace all torn or worn areas, restitching at all seams, and any other necessary repairs; reimpregnation of canvas with original type of impregnation to render it waterproof, mildew and fire resistant, and to strengthen the fabric.

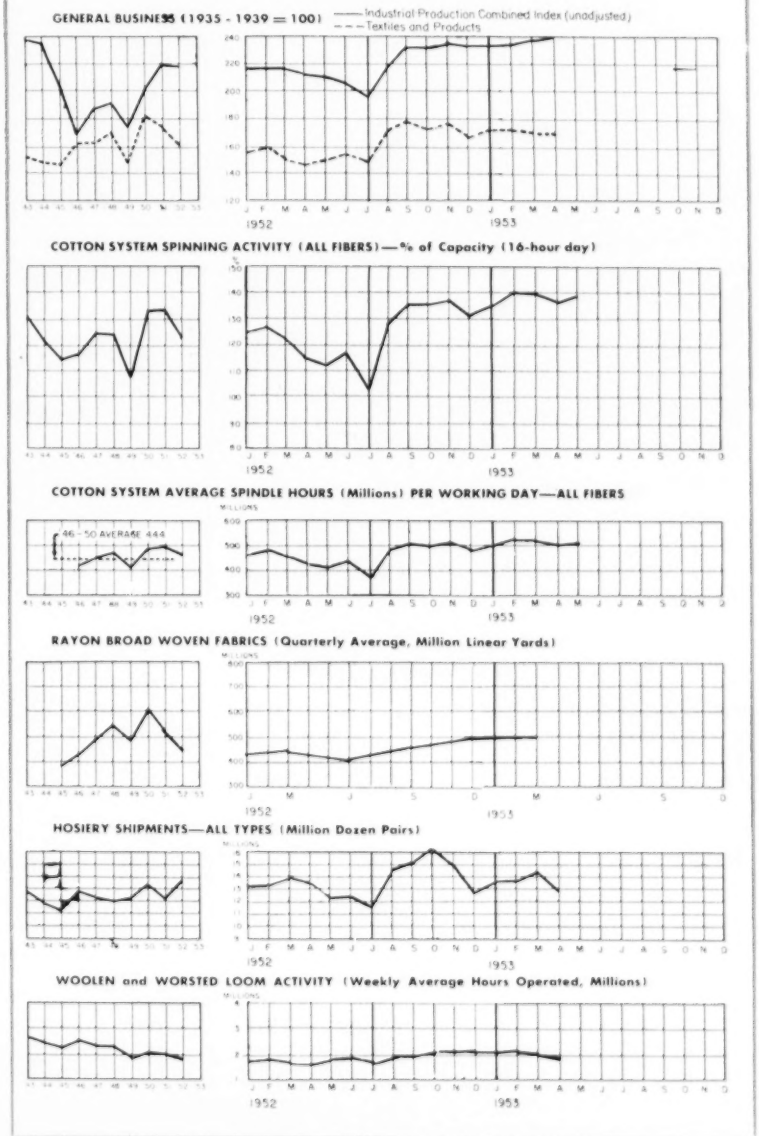
Shrinkage Control Process. A shrinkage control process by chemical treatment for use on circular knitted cotton fabrics is claimed by Beaunit Mills. Stabilization in the range of 3 per cent residual shrinkage is claimed. The process is to be known as Set-4-Size and has been applied only to cotton interlock goods.

(Continued on page 210)

News in Brief

Textile Industry Activity Charts

Source of information: Bureau of the Census, U. S. Department of Commerce; National Association of Hosiery Manufacturers.



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DEPENDABLE SOURCE OF SUPPLY

AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

FIGURES of the United States Bureau of the Census show that in May 1953 the number of cotton system spindles in place dropped to an all-time low of 22,893,000. During the preceding month of April 1953 spindles in place had declined to 22,958,000, and as of that month this was the low point. Only once before has the number of cotton spindles in place dropped through the 23,000,000-spindle line. This was during one month of 1950 and from the looks of the statistics for some of the nearby months of that year, it appears that the 1950 low of 22,977,000 spindles might have been some sort of fluke.

Nevertheless, the Census notes that as of May 2, 1953, there were 22,893,000 cotton system spindles in place. Of these, 19,926,000 spindles were active on 100 per cent cotton, while 1,333,000 spindles were active on fibers other than cotton. In the interest of honesty, it should also be pointed out, however, that spindle hours—number of hours operated times number of spindles—came to more than 12,000,000,000 during April 1953, which is no mean total.

At any rate, the spindles the United States now has in place are a far cry from the 1925 all-time high of 37,900,000. The picture since 1925 has been strictly a downhill grade. Each succeeding year there was a drop of around a million spindles, with the only break in this decline coming in 1946. In that year, as an effect of the war impetus, spindles increased approximately one-half million over 1945.

This is not the sad picture it might be, however, because, thanks to the increased efficiency of new machines, the textile industry is able to produce just about as much now as it did in 1925. As a matter of fact, with all of the spindles we had in 1925, we produced slightly less than 8 billion square yards of cotton goods, while each of the recent years has seen our production running around 10 billion square yards.

Another rather interesting sidelight on this picture is the fact that the relative position of the various fibers has changed rather drastically since 1925. In that year cotton accounted for approximately 86 per cent of all of the fibers, with synthetics taking only 1.6 per cent. Preliminary figures for 1952, however, show that cotton had dropped to 69.6 per cent, while synthetics had risen to 22.9 per cent. As one of television's most popular comedians says, "Strange things are happening!"

Report on New England Textiles

The other day a friend showed us a rather imposing volume entitled "Report on the New England Textile Industry By Committee Appointed By the Conference of New England Governors—1952" [condensation appeared in TI for January, 1953]. If you are interested, the price is $2.00 per copy and the volume may be secured from Professor Seymour E. Harris, Harvard University, Cambridge, Massachusetts. The Report is a monumental work which must have required literally scores of man-hours to compile. As a matter of fact, "scores" is a gigantic understatement because we may be sure that a staff of people must have worked for months compiling the information and preparing the text.

We hate to be cynical about reports on the condition of the New England textile industry because, being rather close to textiles, the writer is most sympathetic with the plight of the industry in that region. It has been beset by all sorts of ills and ailments, and it is a wonder that any mills have survived. Nevertheless, a quick perusal of the Report did not turn up anything new—anything that we had not read in scores of other reports on the condition of the New England textile industry.

As a matter of fact, we were a little bit put out with Professor Harris, and we think rightfully so. The first recommendation in the Report was: "The wage differential (between the North and the South) should be reduced." Then the second recommendation read: "In the program of reducing the wage differential, we asked for adequate minimum wage legislation and administration."

The first two recommendations were somewhat difficult to swallow but the third one took the prize: "Trade unionism should be accepted as a vital necessary force in the South as it is in New England." We could not help but think about the little boy who had measles, and who had a burning zeal to see that his playmates got them too.

There may or may not be some significance to the fact that in Professor Harris' letter transmitting the Report to the New Eng-

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LEATHER LOOM STRAPPING

Fast Deliveries!

Strapping in all styles and sizes now expertly made both in Charlotte, N. C. and Danielson, Conn. Immediate delivery from closest point.

Only the very best **HIDES** are used by Jacobs.
Careful control of **STORING** at exact humidity.
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Danielson, Conn.

land Conference of Governors he mentions "especially for their cooperation" a number of distinguished gentlemen and, like Abou ben Adhem, the name of Mr. Solomon Barkin, Economist of the TWUA (CIO) leads all the rest.

As we read Professor Harris' Report we could not help but think about the numerous other studies of this nature we have read through the years on the New England textile industry. If all of the type contained in all of these reports were strung end to end and then sold for scrap metal, there might be enough money to really strengthen the New England textile industry. New England can once again have a dynamic and aggressive textile industry, but it is not going to have it through the assistance of Professor Seymour E. Harris, Mr. Solomon Barkin nor Mr. Verl Roberts, Assistant Administrator of the Wage and Hour and Public Contracts Divisions of the U. S. Department of Labor, who was another of Mr. Harris' confidantes.

Railroad Cases

A number of court cases throughout the South, which involve the question of whether or not an employer should be permitted to force his employees to join a union, would seem to indicate that the "blessings of unionism," with which Professor Harris seems to be intrigued, are not quite so intriguing in other circles. As this is written, at least seven different court cases are pending in which employees are seeking legal protection for their right to work without joining a union. These are centered largely around the railroads, which have lately gone through a rash of signing union shop contracts.

By way of review, a union shop differs from a closed shop in that employees are given a short period of time to make up their minds whether they would rather join the union or look for another job. This period of time is usually thirty to sixty days. In the closed shop the worker must join the union in order to get the job in the first place.

Typical of these various suits now pending in the courts is one which was filed in North Carolina by G. D. Atwell, a chief clerk of the Southern Railway in its Spencer, N. C., freight office. Mr. Atwell, an employee of the Southern for nearly thirty years, asked the Guilford Superior Court, Greensboro, North Carolina, to restrain the railroad from discharg

(Continued on page 211)

Aug. 27-28—Annual convention of **Southern Hosiery Manufacturers Association,** Hotel Roanoke, Roanoke, Va.

Sept. 10-11—Fall meeting, The Fiber Society, Lowell, Mass.

Sept. 17-19—Annual national convention, American Association of Textile Chemists and Colorists, Conrad Hilton Hotel, Chicago, Ill.

Sept. 24-25—Joint annual meeting, **National Association of Cotton Manufacturers** and **Northern Textile Association,** Wentworth-By-The-Sea, Portsmouth, N. H.

Oct. 1-2—Annual convention, Quartermaster Association, Lord Baltimore Hotel, Baltimore, Md.

Oct. 3—Fall meeting, Alabama Textile Operating Executives, Thach Auditorium, Alabama Polytechnic Institute, Auburn, Ala. Discussion on carding and spinning problems.

Oct. 9—Fall meeting, Carolinas Section of the **American Society for Quality Control,** School of Textiles, N. C. State College, Raleigh, N. C.

Oct. 12-14—Annual forum, Packaging Institute, Hotel Statler, New York, N. Y.

Oct. 14-22—"Textile Recorder" International Exhibition of Textile Machinery and Accessories, Belle Vue, Manchester, England.

Oct. 15-16—47th annual meeting North Carolina Textile Manufacturers' Association, Carolina Hotel, Pinehurst, N. C.

Oct. 19-23—41st National Safety Congress and Exposition, Chicago, Ill. Sessions on industrial safety will be held in Conrad Hilton, Congress, Morrison, and Hamilton Hotels.

Oct. 20-22—Industrial Packaging and Materials Handling Exposition, Boston (Mass.) Mechanics Building.

Oct. 29-30—Annual convention, Carded Yarn Association, Grove Park Inn, Asheville, N. C.

Oct. 29-30—AIEE Textile Industry Conference on Electrical Equipment, North Carolina State College, Raleigh, N. C.

Nov. 9-12—8th Refrigeration & Air Conditioning Exposition, Public Auditorium, Cleveland, Ohio.

Nov. 12-13—Annual meeting, Textile Research Institute, Commodore Hotel, New York, N. Y.

Nov. 30-Dec. 5—24th Exposition of Chemical Industries, Commercial Museum and Convention Hall, Philadelphia, Pa.

1954

Feb. 4-6—Technical meeting, Textile Div., American Society for Quality Control, School of Textiles, N. C. State College, Raleigh, N. C.

Feb. 25-27—Annual convention, Phi Psi national honorary textile fraternity, Carolina Hotel, Pinehurst, N. C.

Mar. 18-20—Annual meeting, Alabama Cotton Manufacturers Association, Hotel Buena Vista, Biloxi, Miss.

April 22-24—Annual convention, American Cotton Manufacturers Institute, Jung Hotel, New Orleans, La.

April 26-30—American Textile Machinery Exhibition (sponsored by **American Textile Machinery Association**), Atlantic City (N. J.) Auditorium.

May 5-6—Spring meeting of **The Fiber Society,** Institute of Textile Technology, Charlottesville, Va.

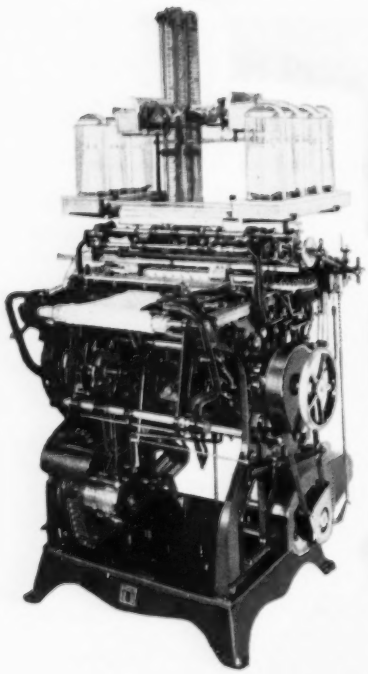
Oct. 4-9—18th Southern Textile Exposition, Textile Hall, Greenville, S. C.

What do these People Buy?

Naturally, hosiery. And when they are selecting the brand they want, they are *open-minded* to the persuasive suggestion of up-to-date suppliers.

SALES and PROFIT WISE, what does this mean to You?

"The hand is quicker than the eye" — but you producers of HOSIERY know that *"eye-stoppers"* can make or break your complete sales effort; merchandise that not only whets the appetite for fine things but stimulates the prospect to become a buyer. Creative imagination is the kick-off point to this end.



TO BE SPECIFIC . . . . . .

Here's the machine for Hosiery production that will allow your creative imagination full sway. The WILDMAN *new* 72 gauge High Production Full-Fashioned Hosiery Machine is keyed to the needs of the market's style and quality requirements in fine gauge hosiery. Economical . . . efficient . . . automatic in operation . . . high production. Inquire today for complete details.

WILDMAN
Mfg. Co.
NORRISTOWN, PA.

Manufacturers of: Full Fashioned Hosiery Machines; Circular Machines for Outerwear, Underwear, Sportswear, Trimmings; Stop Motions

NEW Equipment AND MATERIALS

Machine Simplifies Control of Moths in Wool Bales

Control of moths in wool warehouses can now be easily and quickly effected by using a portable, electrically-driven fogging applicator dispensing a special solution of insecticide such as lindane.

One mill reported a 96% reduction in the average weekly moth count and 97½% decrease in moth-elimination working time when the machine was used.

The fogging machine, known as TIFA (Todd Insecticidal Fog Applicator) 15 M, is an adaptation of the war-time smoke screen generator used on U. S. Naval vessels to shield ship movements, beach landings, and troops in the field.

A solution of insecticide and special oil is fed through the machine and atomized mechanically into a wet spray. The spray is introduced into a blast of superheated air which fractionizes it further. When the spray is emitted through a special nozzle and contacts the outside air, it is converted instantly into a fog. This fog—which may vary in density according to a presetting to a given micron size—disperses quickly over wide areas, covering everything in its path and penetrating the most inaccessible corners.

Todd Insecticidal Fog Applicator.

The insecticidal fog seeps through the small spaces between the bales and penetrates deeply enough into the wool to attack the moths within.

Operating on 110-volt, a-c current, the fog applicator can also be used for dispersion of other insecticides, weedkillers, or fungicides in oil or other solvents.

Todd Shipyards Corp., Combustion Equipment Div., 81-16 45th Ave., Elmhurst, Queens, L. I., N. Y.

For additional data, request item H-201, using Handy Return Card on page 198.

Soft Pressure Attachment for Winding on Tubes for Pressure Dye Systems

A soft pressure attachment for winding synthetic yarns onto 1⅝" diameter dye tubes is particularly suited for winding dye packages that go into high pressure dye systems, and permits a very close control over the winding tension. As a result, packages of proper density are obtained from every spindle. Starting tensions as low as 2 grams can be obtained. Delivery should be overend from cones or an equally free-delivering type of supply package.

The soft package attachment consists of a roller bail assembly, a "close-to-package" type guide, a light-weight tension lever, and a spring arrangement for adjusting the pressure. It can be easily and inexpensively applied to the No. 50 winding machine equipped with pineapple coning attachments.

While the device was developed primarily for processing filament type synthetic yarns, it is also being used for spun yarns where a soft package is desired.

Universal Winding Co., Providence 1, R. I.

For additional data, request item H-301, using Handy Return Card on page 198.

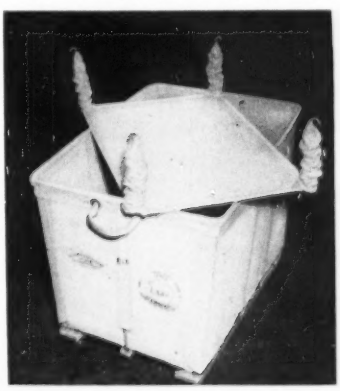
False Bottom for Hampers Makes Unloading Easy

A false bottom automatically keeps work at rim-level of canvas trucks, canvas baskets, and hampers. Called Automatic Lift, the false bottom is suspended from the rim of the container by tension springs.

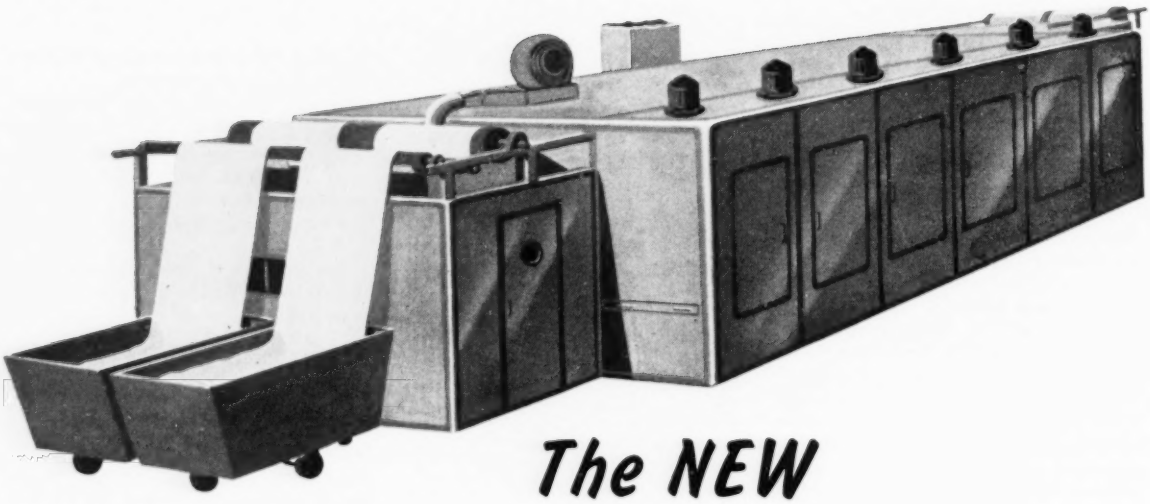
When work is loaded into the basket, the false bottom descends; as work is taken out, the bottom rises. The worker does not have to bend over and reach into the basket to empty it. This low-cost labor saver is especially suited for operations where baskets and trucks are frequently loaded and unloaded.

Platform of the removable lift is a canvas-colored, tempered steel frame. To prevent snagging or pinch-

The Automatic Lift by Lane.



NOTHING EVER BEFORE LIKE IT...



The NEW PROCTOR LOOP DRYER

Never has any loop dryer offered so many operating advantages as the new Proctor. Here are the principal points on which this loop dryer is leagues in the lead over any ever offered . . .

DRYING UNIFORMITY—By utilizing an entirely new concept of air movement, this new Proctor Loop Dryer-Curer provides the greatest drying uniformity ever offered in this type of equipment.

PRODUCTION—Maximum capacity is now obtained with minimum power requirements, due to the new system of air circulation.

MINIMUM MAINTENANCE—New smooth construction inside and outside of the housing, rugged conveyor design, direct connected motors for fans instead of belt or coupling drives and ready accessibility—mean new low maintenance costs.

FLEXIBILITY—Standard design machine is available for wide range of applications to suit individual mill requirements of production and quality. Machine may be custom designed with the same inherent advantages where special needs must be met.

SHORTER DELIVERY—The new Proctor is designed to give you the best loop dryer in the shortest possible time.

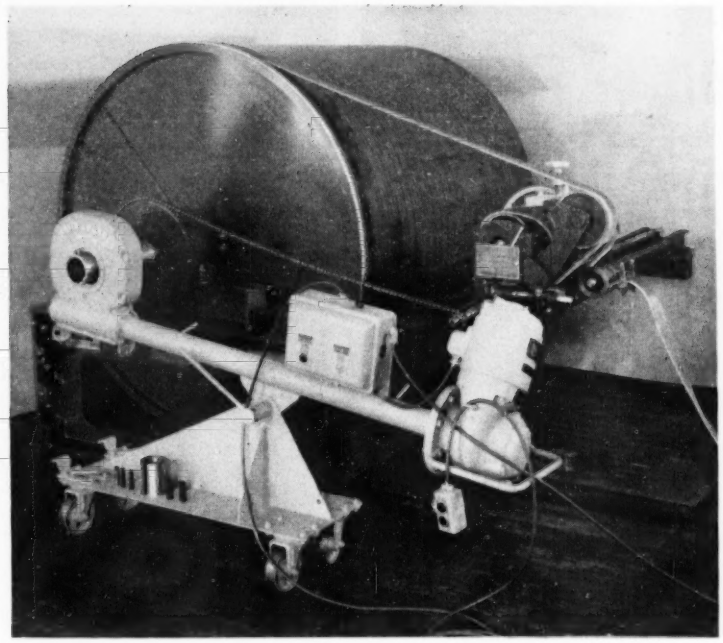
Once you know the full story of this new Proctor loop dryer you'll agree there was nothing ever before like it. Write for details.

PROCTOR & SCHWARTZ · INC ·
PHILADELPHIA 20 · PA ·

ing of fabrics, the rust resistant springs are encased in canvas sleeves. The false bottom, which comes in a variety of sizes, can be used with any standard size canvas truck or basket. It also may be adapted for other types of containers.

W. T. Lane & Bros., Inc., Poughkeepsie, N. Y.

For additional data, request item H-109, using Handy Return Card on page 198.



Davis & Furber's new power winch for clothing card cylinders.

Power Winch Speeds Card Clothing Operation

Two men can wind clothing on a 60" wide card cylinder in 15 minutes with a new power winch. In the event that the unit is stopped during the winding of the fillet, there is no tension loss. The machine is self-locking, and constant tension is controlled automatically by the card clothing tension machine (which is used in combination with the power winch), the previously set tension continuing with no slippage when starting up.

Unit is shipped assembled and ready for use. It is portable, being mounted on wheels for easy transportation in mill; only 14 inches wide. Shafts with centers from 17 inches to 45 inches above floor can be driven. All moving parts totally enclosed.

Machine can be reversed and also can be "inched" small amounts by swinging the flat lever on control switch to hold the "stop" button in a depressed position and then pressing and releasing the "start" button.

Davis & Furber Machine Co., North Andover, Mass.

For additional data, request item H-302, using Handy Return Card on page 198.

Tricot Warper Permits Control of Beam Density

An air operated presser roll in the improved Cocker tricot warper allows the operator to control at will the density of the beam being wound. If records are kept, that same density can be duplicated on any beam made at a later date.

Another improvement is the air-operated doffing arrangement which simplifies and speeds this operation and eliminates the need for lifts or hoists.

Warner electric brakes provide quick stopping when an end breaks.

Cocker Machine & Foundry Co., Gastonia, N. C.

For additional data, request item H-303, using Handy Return Card on page 198.

NEW Equipment AND MATERIALS

Tension Brakes for Yarns Requiring Torque Range of 0.4 to 14 oz - in.

Two new magnetic tension brakes of the hysteresis type with torque ranges of 0.4 to 4.0 and 2.0 to 14.0 ounce-inches are designed to provide constant tension and thus reduce abrasion and excess flexing of synthetic and natural yarns as well as rubber, glass fiber, and wire. The larger sizes of the new brakes (first brake developed had torque range of 0.1 to 0.5 oz-in.) make them particularly adapted for use on a loading device where constant torque is required.

Approximately two and three inches in diameter and weighing about ¾ and 2½ pounds respectively, the brakes have a speed range of 0 to 1500 rpm.

Turning the calibrated aluminum magnet housing decreases or increases the torque of the brake by altering the distance between four Alnico magnets and a hysteresis ring.

The brake holds stalled tension by a tendency to reverse direction of rotation for a few degrees after decelerating to a standstill.

Because the braking action is pro-

Adjusting the G-E hysteresis type magnetic brake.

A new combination for new fabric opportunities

The new man-made fibers now get a new teammate . . . Stymer R!

The growing popularity of modern, lightweight, wrinkle-resistant fabrics—woven of new fibers such as "Dacron" polyester fiber or "Orlon" acrylic fiber—is one of the more important trends in the textile industry. And it can be counted on to *gain momentum* in the coming months, as new filament fibers become increasingly available.

The successful looming of new constructions, using new fibers, requires important changes in techniques, in methods . . . *and in the warp size employed.*

What is Stymer R? Stymer R is a white granular material readily soluble in water at 190° F. It is a vinyl compound, developed for sizing filament polyester and acrylic fibers. Free-flowing, it is relatively easy to handle under all conditions. An ideal companion for man-made fibers!

This is why Monsanto has added *Stymer R* for the sizing of the newest filament synthetics to its famous Stymer family. Like Stymer S, for filament acetate, and Stymer LF, for solution-dyed acetate, Stymer R is further evidence of the way Monsanto meets—and frequently anticipates—the ever-changing, ever-growing needs of the industry.

If you are considering the addition of synthetic or blended fabrics to your line, why not be prepared—get in touch with MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Boston 49, Mass.

Stymer: Reg. U. S. Pat. Off.
*"Dacron" and "Orlon" are DuPont registered trademarks.

MONSANTO®

SERVING INDUSTRY . . . WHICH SERVES MANKIND

vided by a magnetic field, there are no rubbing parts to wear and the unit will retain the required torque unaffected by lint, moisture, and heat.

General Electric Co., Control Dept., Schenectady 5, N. Y.

For additional data, request item H-105, using Handy Return Card on page 198.

NEW Equipment AND MATERIALS

Lift truck attachment weighs bale of cotton while in transit.

New Lift Truck Weighing Combination

A new device for electric or hydraulic lift trucks is a combination swivel arm and scale that weighs merchandise while it is being transferred, stacked or inventoried.

As the accompanying picture shows, this is a steel arm that has been welded to the mechanism at the front of the truck. This arm revolves in a wide arc and can be locked as desired. Out on the end of it, a suitable hook is provided to engage the Dillon Weight Indicator. By this arrangement, a highly mobile weighing set-up is secured at a low cost.

Most any shop can install this swivel arm. The weight indicator can be removed when desired and can be used at other points in the mill. It has a 16" diameter dial with ball bearing swivel hook and rapid adjustment for tare loads. Numerous capacities are available. Being fully mechanical, the indicator is not affected even by quite extreme temperature changes. Readings are instantaneous.

W. C. Dillon & Co., Inc., P. O. Box 3008, Van Nuys, Calif.

For additional data, request item H-106, using Handy Return Card on page 198.

Raw Stock Washer and Dryer for Lab Use

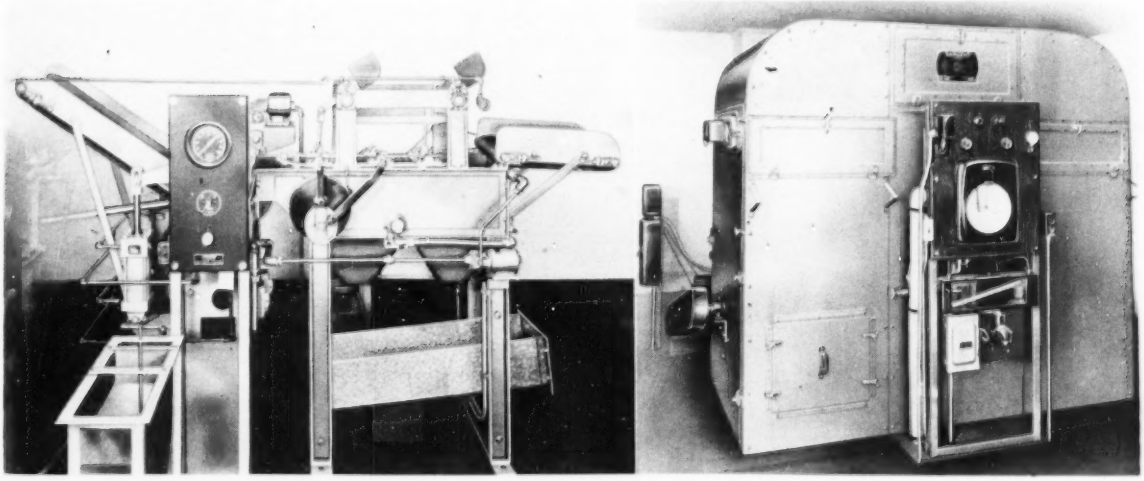
Scouring, bleaching, acidifying of raw stock; shrinkage measurements and control; dye fastness and penetration tests; wetting out time; detergent and chemical solutions and their effectiveness on various fibers and blends — all these and many other processes can be tested and production routines established through use of an economical, practical, junior size washer now on the market.

Also available is a companion to the Sargent Junior Washer — the new Junior Dryer which enables determination of the one best, economical production method for drying any given fiber or fabric.

Both laboratory units have com-

(Continued on page 212)

The Sargent Junior Washer (left) and Junior Dryer for laboratory investigations.



First...a good recipe

A special steel formula, superior tempering, Textile's rigid scientific controls, automatic and electronic . . . Result: needles that can stand-up under today's high-speed knitting operations. The superior performance of Textile Spring-Beard Needles is a result of a good recipe . . . mixed with precision . . . tested for perfection.

When you use Textile Spring-Beard Needles you'll see the results in better fabrics and increased profits.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile

SPRING-BEARD NEEDLES

For Full-Fashioned Knitting
For Tricot Knitting

ARROW Latch Needles

Fontaine Converting Works'

Super Resin Finishing Range

The only one of its kind in existence, it is a primary element of Fontaine's extraordinary capacity for getting goods into the hands of its customers.

Staff Prepared

EXCLUSIVE

"WE CAN DYE, finish, and deliver an order from Martinsville, Virginia, into the shops of New York cutters as fast as, and sometimes faster than, many big verticals with warehouses right in the metropolitan area are able to ship inventoried goods," maintains Julius Hermes, manager of Fontaine Converting Works, Inc. "Cutters place great emphasis on speed of delivery. And, as commission dyers, we must be one step ahead of the mill dyer."

A quick glimpse of the Fontaine operation might reveal why these statements aren't idle speculation. One of the principal reasons for Fontaine's extraordinary capacity for getting goods into the hands of customers lies with its super resin finishing range, the only one of its kind in existence.

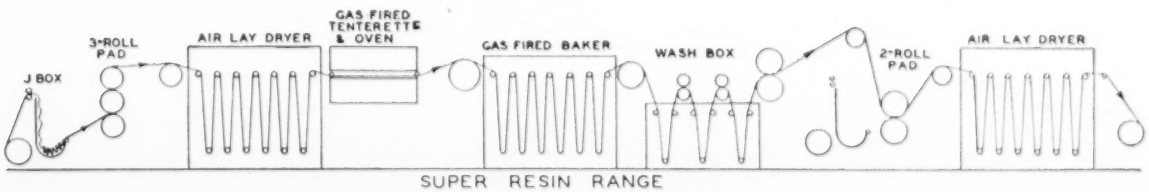
192 feet long and requiring 600 yards of cloth for threading up, the range is completely continuous from padding, through drying, curing, washing, repadding, and final drying. Cloth travels at cruising speeds of 65 yards per minute without interruption.

It took the better part of a year to coordinate, design, fabricate, and install with six major suppliers pooling engineering talent to make the super range a reality. Integrated within the range, in order of operation, are a three-nip 15-ton Morrison padder, an airlay dryer, a unique 100" clip tenter from Marshall & Williams, a loop baker, a three-bowl Rodney Hunt Tensitrol open-width washer, a two-nip 15-ton Morrison padder, and another airlay dryer. Drying equipment was supplied by Proctor & Schwartz.

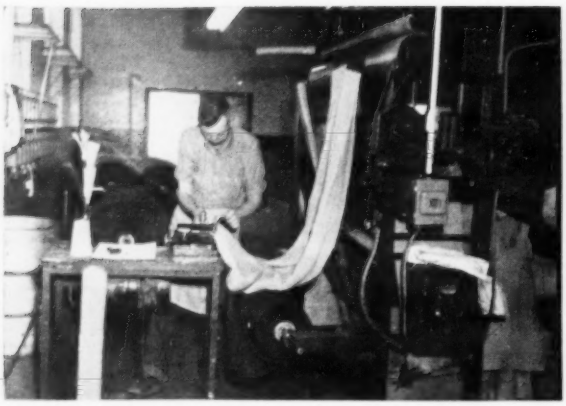
The monster range needs 62 motors ranging from 1 to 15 hp to operate, in addition to three control box motors and one master generator for a-c, d-c conversion. Reliance motors and drives are used throughout, and Cutler-Hammer furnished all motor controls. There are six drive motors, each controlled by electronic components of preceding drive so as to speed up or slow down in order to maintain consistent tension. Each of the units may be run independently as well as in tandem.

Each integral section of the range is furnished with its own let-off and wind-up. Consequently, units can be cut in or out of the continuous range according to the treatment required, thereby allowing for the most efficient use of all equipment. This arrangement also provides a safety factor in case any one unit has a stoppage; cloth can be rerouted through an identical unit standing by and then transferred back to the next step of the continuous range. Operation of the range is not tied up by a breakdown occurring in any one of its components.

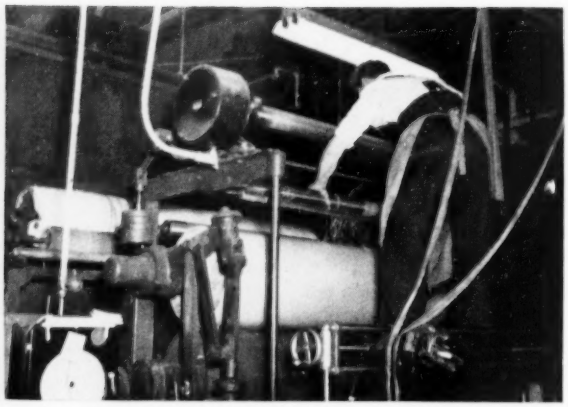
Mr. Hermes points out that this installation is the first "truly continuous" one, inasmuch as an open width washer plus a conditioning padder and dryer are incorporated. He further claims that the drying and curing techniques involved are superior since cloth is never subjected to tensions which might detract from loftiness of the fabric. Instead of tenter frame drying where cloth is tightened and flattened, the Fontaine operation consists of running the padded goods



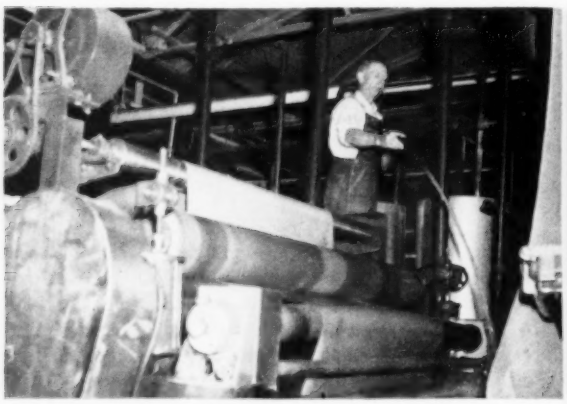
SUPER RESIN RANGE



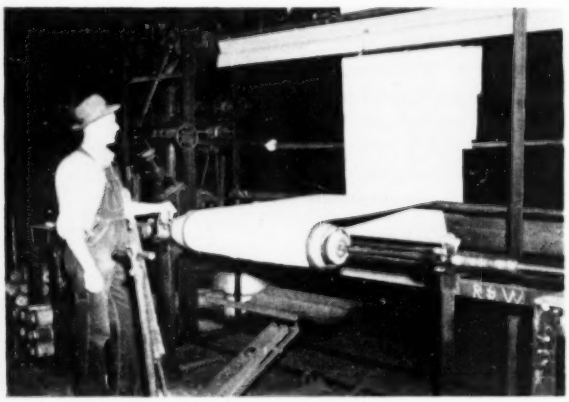
TACKING new piece onto leader tail in motor driven floor scray which feeds resin padder. Quick changeovers are made without downtime.



PADDER is given thorough, rapid washing in changeover. Old bath is dumped and new formula is pumped into bowl. Changeover is accomplished in minutes.



OPEN WIDTH WASHER is also flushed during changeover with leader threaded through so that interruption is brief.



AT DELIVERY END of range, jack is kept at standby beneath roll of leader cloth which will be removed when finished cloth comes through.

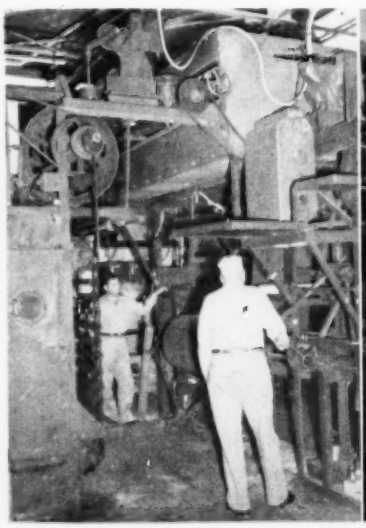
through an airlay drier at 250 F in a relaxed state and then setting width in a flash cure on a Marshall & Williams 100″ tenter frame just prior to normal curing. On this novel tenter, designed especially for Fontaine, cloth is exposed to gas-fired temperatures of 600 F for about one second before proceeding to curing in the loop dryer at 340 F.

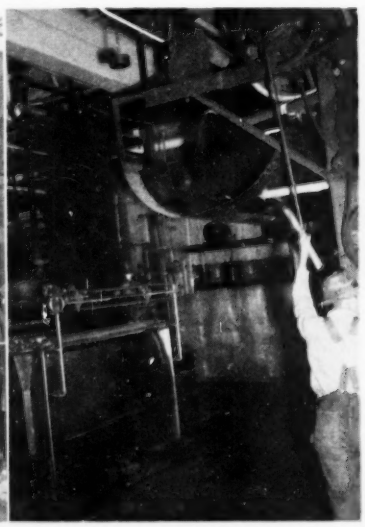
Fontaine processes all fabric constructions and blends except 100% cottons or wools. The range, like the rest of this mill's dyeing and finishing equipment, accommodates 60″ goods.

Record Breaking Production. So far, Fontaine's longest run on this range went 32 hours without stop and totaled 1000 pieces. However, short runs are very easily conducted. Average down-time for changeovers amounts to less than

GAS FIRED TENTER (Marshall & Williams 100″) is installed at ceiling height between airlay dryer and loop curer. In this view, the dryer is being operated as an independent unit.

OPEN WIDTH WASHER (Rodney Hunt Tensitrol) is fed from a ceiling height scray which allows changing the scouring solutions without interfering with production of the loop curer.





five minutes at the padders and washer.

Floor-type motor driven scrays installed before the two padders permit extremely rapid changeover. A ceiling-mounted scray in advance of the Tensitrol washer allows changeovers at this point without disturbing operation or production of the curer. Additional pieces are tacked onto the tail end of a run by a tacking machine stationed at the feed of the range. Since the scray here is normally full, production at the resin padder is not interfered with while the piece is being tacked.

When a new run is ready for processing, a leader is tacked onto the tail end of the preceding run. Then the leader is threaded through at regular production speed. Contents of the padders and washer are discharged, and units are flushed with a powerful spray of water. The required formula is pumped into the bowls, the new piece is tacked onto the tail end of the leader cloth, and operations begin once again. Hardly any time is lost.

Neither is there any lost time at delivery ends. One center bar is always kept at standby position while a dozen more are kept in ready reserve. Rolls are wound with a jack underneath so that a full roll can be quickly moved out and another center bar slipped in for the next roll.

Much of this efficiency is due to the precision teamwork of the operatives. A cadre of nine men, especially trained and averaging ten years employment with Fontaine, are assigned to the range for three shifts. These nine men are guaranteed 40 hours wages whether there is full work or not. They are assisted by fill-ins.

New Finishes. Fontaine's range was among the first to run Aquex-Cuprofix treatments, a finishing process that renders direct dyed viscose rayon fabrics completely washable with low residual shrinkage and no progressive shrinkage in laundering [described in T.I. for May, 1953, page 231]. The process imparts excellent color fastness to bleeding and light using direct dyes in place of vats. Tensile strength and flex abrasion are unaffected.

One of the problems remedied by this treatment was the bleeding of colors from rayon fabrics into the resin bath, necessitating changing of the bath at great expense. Applied in the first padding, the treatment is conducted in normal fashion on the range.

After curing, goods so treated are neutralized in bath containing detergent and soda ash and then rinsed in the following two bowls. An additional rinse may be given in the padder following. Fabric is dried relaxed in the airlay unit and finally steam framed to finished width in a clip tenter. Though not integrated with the continuous range, Fontaine's clip tenter is located adjacent to the airlay dryer. It is fed from a motor driven floor scray.

Four-Way Attack on Tar Spots

A four-pronged attack on the bothersome "tar spot" problem in cotton is well under way, the National Cotton Council's production and marketing division reports.

Current action, based on recommendations adopted at the Council's annual meeting in January, is summarized by the division as follows:

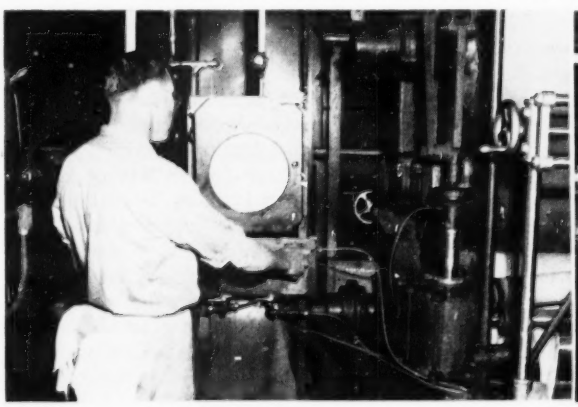
1. Manufacturers of asphalt-coated picksacks are developing a substitute material for treating picksacks. They now plan to have the new material on the market in 1954.

2. Compress-warehouse officials are devising practical means for removing tar from principal working areas and passageways in their plants—and for preventing any future contamination that might damage cotton bales.

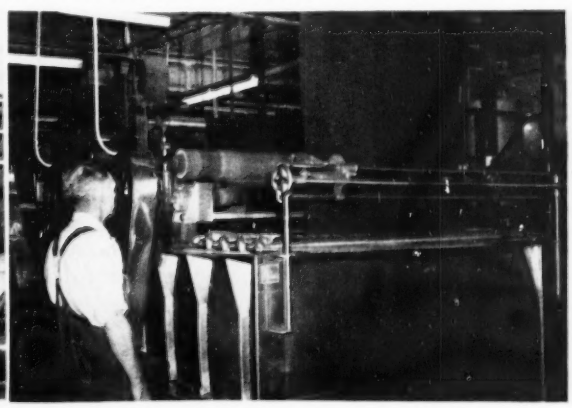
3. Cotton men met with officials of all southern railroads in May and June to discuss means of supplying the industry with cars free of asphalt and other contaminating materials such as lampblack and cement.

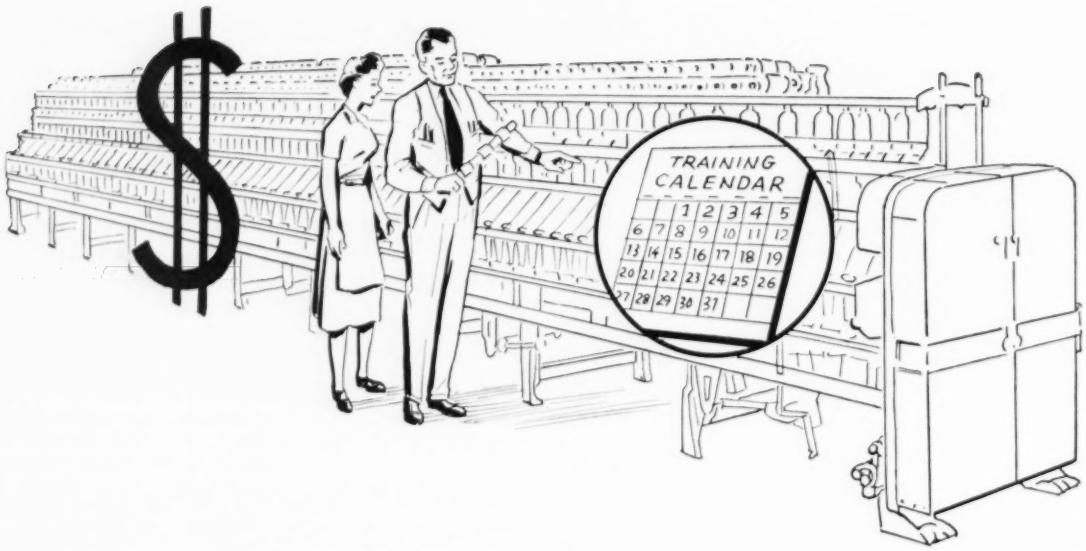
4. Ginners are organizing a program that will provide for removal of the loose tar commonly found in jute bagging.

TWO-PEN TAYLOR RECORDER keeps track of padder roll pressures at each bearing. Note booster tubes to pistons which correct for differences in pressure.



OPEN WIDTH WASHER pictured is integrated with Fontaine's continuous resin finishing range and is operated at synchronous speeds, with tension regulated.





This mill tried four methods. Here's the

Training Program That Works Best

Cost and training time, advantages and disadvantages, of four methods:

- **Vestibule school**
- **Segregated, on-the-job**
- **Non-segregated, on-the-job**
- **Non-segregated, foreman instructor**

By F. S. WIGGINGTON

EXCLUSIVE

A COMMON error in the textile industry is to underestimate the importance of the training problem for operatives. Any mill which has a fairly large group of trainees and is not keeping a cost record on them is likely to be unpleasantly surprised when such a record is set up.

Cost of Training Emphasized. Figure 1 (Trainee Cost Report) shows the cost for one week several years ago of forty-four trainees in one mill. Fifty-two weeks, at this rate, will approximate $30,000 annually. This shows the cost in unearned wages only, not taking into consideration the hiring cost, bad work, and overlapping jobs. Because wages have increased considerably since then, the figures would probably be higher now.

Any mill management desiring to check its own training costs can easily set up the simple record shown in Figure 2. In many cases the results will show that the training program offers the greatest single opportunity in the mill for reducing costs.

How to Begin. The training program consists of a very few elements which fall generally into two groups. One group, facing top management, has to do with the organization of the program as a whole. The other, facing the departmental supervisors, concerns the handling of their own trainees within the framework of the policies laid down by the mill management. This will be true whether the mill has three hundred or three thousand employees.

The first step in setting up the program should be to decide upon a definite order of procedure. This is most important. Some phases of the program can be set up quickly. These should come first. Others will have to be worked in gradually over a considerable period of time. If they are all attempt-

ed at the same time, the entire effort is likely to bog down without any clear cut results. A suggested order of procedure is as follows:

1. Set Up the Necessary Records. These should be kept to the minimum. A weekly cost report, an individual progress sheet for each trainee, and the weekly turnover record from the personnel office should suffice. By beginning with these, the present training program can be evaluated and future improvement can be measured.

2. Begin a Campaign To Sell The Departmental Supervisors on the Program. The cost sheet can be used in foremen's meetings to underscore the necessity for taking action. It will also point out the particular departments and jobs where the costs are heaviest. The use of all three records will enable the management to determine which departments are cooperating and which are dragging their feet as the program develops.

3. Decide Where, When, and by Whom the Training Should Be Done. "Where," means making a choice between using a vestibule school, segregating the learners in one section of each department in the mill, or scattering them over the various departments.

"When," means which shift should be used for the training. Is it better for the trainees to be on the first shift under the overseer for a short time, or should they begin on the shift where they will work?

"Whom," refers to either the use of special instructors, or to putting the trainees with the regular employees over the mill.

In this article, case records are given which show the results of each method in actual practice; the reader can then make a decision based upon our experience, if he so chooses.

4. Study Orientation Procedures Now Being Used, and Decide What Changes Should Be Made. The new plan should be worked out with participation by the personnel director and overseers. Its success will depend upon them. The new plan will probably be installed better by using a step-by-step procedure, working in one phase of it at a time.

5. Work Out Specific Job Training Procedures with the Departmental Supervisors. This is left until the last because it is by far the most difficult and lengthy of the steps involved. It is certainly the one which will meet with the most resistance, largely passive, from the production supervisors. The step is also the one which will determine whether or not the training time will be reduced.

Each of the proposed five steps is discussed in considerable detail:

Step 1. The Records. These should be few and simple. As few as possible written reports should be required of the production supervisors. The three reports already mentioned (weekly cost report, individual trainee progress sheet, and weekly turnover record) seem to be absolutely necessary. However, only one of these, the trainee's progress sheet, has to be kept by the foreman.

The Cost Sheet. In order for this report to be compiled, it will be necessary for the foreman to keep a daily record of the trainee's job loads. This can readily be recorded in his time book in the same manner by which he shows the production of his skilled operatives.

By allowing two lines to each name, the hours can be kept on the first line and the job load on the second line. For example, if a spinner trainee is running five sides on a 12-side job, the fraction 5/12 will be written in the square under the hours worked. The value of the trainee's production is then five-twelfths of a regular spinner's wages, and it may be subtracted from the wages actually paid the trainee in order to determine the unearned labor cost.

By making up wage tables for each job and adopting the gen-

Trainee Cost Report (Fig. 1)

Week Ending _____

Dept.	Job Title	No. of Tr.	Paid This Week	Earned This Week	Cost This Week	Cost To Date
Card.	Draw. T.	4	45.65	29.12	16.53	304.66
Card.	Frame T.	6	131.56	23.85	107.71	925.24
Card.	Total	10	177.21	52.97	124.24	1229.90
Spin.	Spin.	14	396.90	225.82	171.08	1179.80
Spin.	Dof.	6	143.51	75.45	68.06	429.64
Spin.	Total	20	540.41	301.27	239.14	1609.44
Weav.	Bat. T.	5	84.13	71.65	12.48	112.27
Weav.	Wvr.	9	335.77	135.66	200.11	2605.16
Weav.	Total	14	419.90	207.31	212.59	2717.43
All Departments		44	1137.52	561.55	575.97	5556.77

Trainee Report (Fig. 2)

Department _____ Week Ending _____

Name	Job	Date Entered Training	Weeks On Job	Paid This Week	Earned This Week	Cost This Week	Cost To Date

Training Schedule for Spinners (Fig. 3)

Name _____ Date Employed _____

No. of Weeks	Week Ending	No. of Sides Std.	Actual	Hours Worked	Remarks
1	———	0	———	———	———
2	———	2	———	———	———
3	———	3	———	———	———
16	———	10	———	———	———

eral practice of advancing the job loads only on the first day of the work week, the compiling of the weekly report can be greatly facilitated.

One form of cost sheet which has been used successfully is shown in Figure 2. If desired, additional columns can be added to show progress (standard and actual) and remarks.

The total training cost for each job, and also for each department, should be shown. A combined report should be made from the departmental reports (see Fig. 1). The departmental reports may be clipped together with the combined report on top.

The superintendent can then see at a glance how costs are running. If the combined report points out one or more jobs where the training cost is excessive, he can quickly consult the departmental report for additional information.

Each department should receive a copy of the combined report and one of its own report. The combined report will enable each overseer to compare his own training cost with those of the other departments. The departmental report may go into the loose-leaf notebook with the trainee progress sheets.

If this is done when the foreman fills out his progress sheets on Friday, he will have before him the cost on each trainee to aid him in planning his next week's assignments. This will also point up the importance of making a decision about those who show little promise before the cost becomes excessive.

The Progress Sheet. The trainee's progress sheet should be kept simple in order that the foreman can make it out easily and quickly (see sample, Fig. 3). Friday seems to be the best time to fill these out. At this time, the foreman can consult the progress sheet and cost record of each trainee and, putting this information with his knowledge of the performance on the job, can make a decision about the job loads for the coming week.

A different type of progress sheet may be made for each job, showing standard job loads for each week; or a uniform sheet may be used for all of the jobs with the standards omitted. If standards are set up, they should be based upon the actual experience in that mill.

Nothing but trouble may be expected if standards are set up arbitrarily or if they are borrowed from another mill or copied from a magazine article. Even when set up properly, standards should be reviewed from time to time and brought into line with current experience.

The Turnover Record. Since most mills will already have a record showing the terminations each week, it does not seem necessary to discuss this at any length. Each department should receive a copy in order that the overseer may compare his turnover with that of the other departments. The personnel department should also make a statistical report showing percentage of turnover by departments and by jobs at regular intervals. This will indicate most effectively which departments have excessive turnover and which are the jobs that people are leaving.

Step 2. Selling the Supervisors. The members of the supervisory staff of any organization almost inevitably reflect the attitude of the man at the top. If the production supervisors are careless and indifferent in their handling of new employees, the fault lies with top management — usually, the superintendent. He can correct these faulty attitudes by showing the same concern for each department's trainees as he does for its production and quality.

If it is desired to keep more of the people who are employed, to train them more efficiently, to reduce training costs generally, then the mill's top executive should begin to talk about these things when he discusses production efficiency, quality, waste, etc. This need not wait for the setting up of records or for any other phase of the program.

If each overseer and his secondhands used the same care and skill in dealing with people that the average superintendent does, the problems centering around new employees would largely disappear. So the solution is for the superintendent to transmit his attitude and technique to supervisors. This will be a long, gradual, and never wholly successful process, it is true. However, the results will richly repay the effort involved.

A beginning can be made in the regular foremen's meetings. Then, as records are devised, definite orientation procedures set up, and specific job training methods developed, all of these will offer opportunities for working together toward a common goal.

But it should be remembered that sustained effort is as necessary in a training program as it is in keeping production and quality up. Let the pressure go slack for a few weeks and the situation will gradually revert to normal.

It is true, of course, that many overseers are more skillful in handling people than their superintendents are, and that it is not uncommon for the best personnel man in the organization to be a particular secondhand. Nevertheless, the statements made above are generally true.

Step 3. Where, When, and by Whom. Much has been written* in

*See TI, March 1952, for 24-page report on "Textile Training" and the highlights of current successful practice. Limited number of reprints available.

recent years concerning (1) the relative merits of the vestibule school and of on-the-job training, (2) the advantages of training on the first shift directly under the overseer as compared with the trainee reporting immediately to the night shift where he will work, and (3) the desirability of segregating the learners in the mill under instructors, or of scattering them out over the departments with the regular employees.

This discussion will be based upon actual plant experience over a five-year period during which each of these methods, including also a variation of No. 3, was used at different times. The advantages and disadvantages which were found in each procedure will be listed, and data will be given showing the training periods necessary at our mill under each system.

All three methods of training were used with spinners, doffers, battery tenders, and weavers. However, since the results were similar in all cases, only the training of spinners will be discussed. Card room training was done on the job throughout due to the machinery involved.

The Vestibule School

In the vestibule school, which was conducted on the first shift, only two spinning frames were used because the space was limited. As the number of trainees at any one time ranged from two or three up to twelve or fifteen, a way had to be devised to keep them all usefully employed. This was done by breaking the job down into its principal elements and drilling the girls, in groups, upon one job element at a time.

Teaching Job Elements. For repetitive drill, the operations selected were (1) putting up ends by taking the bobbin off, (2) putting up ends by pushing the (filling) bobbin up, (3) cleaning the scavenger rolls, (4) replacing the roving in the lower creel, (5) replacing the roving in the upper creel, and (6) replacing the roving in the single creel with front and back rows of roving.

For example, four girls would have one side of a frame divided among them with so many scavenger rolls of ends, to each girl. Starting together, each of them would tear down several ends at a time and put them back up until every end assigned to her from left to right had been torn down, put back up, and the scavenger rolls cleaned. She would then sit down until all had finished.

The instructor (or instructress) watched closely to prevent unnecessary motions and undesirable habits from developing. When all had finished, the instructress would call back those she thought needed special help. The effort was to develop speed and proper methods through repetitive drill and competition.

In the roving drills, bobbins were removed whether they were running out or not.

Between drills, the girls were shown the other operations, such as cleaning, starting and stopping the frames, taking out and replacing the top rolls, etc. They were also given essential job information which was gradually worked into a list of items to be covered, and finally, into a handbook.

During the latter half of the shift, the trainees were taken into the mill and put with experienced spinners, although still under the supervision of the instructress.

After about two weeks, they were given sides in the mill on the first shift. The instructress, during the period she spent in the mill, continued to spend some time with them, talking with them about the management of their jobs and watching for any faults to be corrected. Certain frames on the first shift were reserved for trainees who were alternated between filling and warp and between fine work and coarse. When it was believed that they were capable of running a set of sides, they were sent to the third shift.

Advantages of Vestibule Training. There were several advantages to this method of training:

1. The girls could make their adjustments gradually instead of having to become accustomed to the noise, the night hours, the new job, and the unfamiliar surroundings all at one time.

2. In a small group, they made friends quickly and were usually able to go into the mill and, later, to the night shift with a friend or two.

3. Job methods and job information were mastered quicker, more effectively, and were covered more systematically.

4. The instructor became acquainted with the girls quickly and, in a day or two, could sort out those who, in the mill, might remain on the payroll for several weeks before the foremen decided that they were not worthwhile prospects for employees.

5. Having been drilled in all types of work, they could be used upon any job where they were needed.

6. Training time was shorter for the results accomplished.

Disadvantages of Vestibule Training. But there were some serious disadvantages to the vestibule school:

1. The girls did not like the repetitive drill, much preferring the production work in the mill.

2. Transferring the stock between the mill and the school was a problem.

3. It seemed impossible to keep a uniform flow of trainees from the personnel office to the mill. There were almost always too few or too many girls in the school.

4. Some girls quit when their time came to report to the night shift.

5. The night foremen expected good spinners to be sent to them, and they did not have the same tolerance towards the girls' shortcomings that they did for those whom they themselves trained.

6. The system was more expensive.

Training Time. The training time of representative girls trained by the vestibule method is given in Figure 4. The irregular rate of ad-

Spinner Training Time by Vestibule Method (Fig. 4)

Trainee	Weeks in Training 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Number of Sides Each Week
NO. 1	0	2	4	4	4	5	6	7	8	8	10	*					
NO. 2	0	2	2	2	3	5	5	5	5	6	8	8	8	8	10	*	
NO. 3	0	2	3	5	6	7	8	9	10	*							
NO. 4	2	3	3	4	5	6	6	7	7	10	*						
NO. 5	0	1	2	3	4	4	5	7	7	7	8	8	8	10	*		

* First week on full job

vancement was partially due to the fact that additional sides were not always available when a girl was capable of running more. Too, the foremen usually had to be prodded into assigning more work since they were more interested in a smooth running job than they were in the advancement of the trainees. However, the progress of trainees will hardly ever be uniform throughout their training periods.

In discussing the time required to train spinners, it should be explained that the term "spinner" is not very definite. The trainee taking over a full job is almost never able to equal the work of the spinners around her. When the work runs badly, she is likely to be in trouble. In this program, a trainee was presumed to have become a spinner when she could run, in a manner satisfactory to the foreman, the set of sides that he had available at that time. If the time required to develop a really capable spinner is desired, two to five years would probably be a more accurate estimate.

The data given in Figure 4 show that the methods used in the vestibule school gave excellent results. For handling large numbers of trainees under forced draft, this system has much in its favor. For a long range program, the management finally decided that its disadvantages outweighed its advantages.

Segregated, On-the-Job Training

In the second type of program tried at our mill, a small spinning room in the plant was run entirely by trainee spinners and trainee doffers under the supervision of a spinning instructor, a doffing instructor, and a section man—all, of course, under the regular mill foremen. This training was done on the second shift, because by that time there was no third shift. There were 31 frames in this room, of which seven were warp frames and the remainder were filling.

This segregated and on-the-job training system retained most of the good features of the vestibule school and eliminated its most serious disadvantages because the trainees went on full jobs on the same shift and under the same foremen. This set-up was used for more than a year, and it kept a steady flow of spinners and doffers going into the main spinning room during that time.

Disadvantages. Certain disadvantages did develop:

1. When the work ran badly, all of the trainees were in trouble at the same time, and the entire room was torn up. This was partly due to the fact that they were moved up too fast.

2. A more serious difficulty was the apparent inability of the two instructors and the section man to work in harmony.

3. Finally, of course, there was still the expense of the instructors.

Training Time. The training times of the spinners taught under this system are shown in Figure 5. The difference in the average training periods, eleven weeks in Figure 4 compared with sixteen weeks in Figure 5, is not necessarily as expensive to the mill as it might appear to be. A more important factor is the rapidity with which the girls are advanced during the early weeks of their training.

The training cost of trainee No. 6 in Figure 5, for example, was $107.48. Trainee No. 4 was in training for four weeks longer, yet cost only $117.43.

Trainee No. 5 was in training only two weeks longer than No. 4, yet the training cost in her case was $170.73:

A comparison of the number of

Spinner Training Time by Segregated, On-the-Job Method (Fig. 5)

Trainee	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Number of Sides Each Week
NO. 1	0	2	3	4	5	6	8	8	8	8	8	8	10	*								
NO. 2	0	2	4	5	6	6	6	7	7	8	8	8	9	8	9	8	9	10	*			
NO. 3	0	2	3	4	4	4	6	6	6	8	8	8	9	9	9	9	10	*				
NO. 4	0	2	2	4	4	5	6	6	7	7	7	8	8	8	8	8	8	8	10	*		
NO. 5	1	2	2	4	4	4	4	6	4	5	4	5	6	8	8	9	9	9	9	9	10*	
NO. 6	1	1	2	2	3	4	6	6	7	8	8	8	9	9	10	*						

* First week on full job

sides carried by each of these three girls during the early weeks of their training will account for the low cost of the additional training for No. 4. Another factor to be considered in comparing the two sets of figures is that in Figure 4 the first two weeks are not productive, while in Figure 5 every week is productive.

Non-Segregated, On-the-Job Training with Instructors (The Failure).

The training program entered a phase of "non-segregated, on-the-job training with instructors" when the third shift was again started.

This time, although an instructor was used, the trainees were scattered over the spinning room wherever they were needed.

This method appeared to have a great many of the disadvantages of the other two systems and very few of their advantages. Since the trainees were scattered over a fairly large area, the instructor could not supervise them adequately, nor could the secondhand determine whether or not the instructor was doing all that she could. This remained true even though three different instructors were tried.

Since this method did not give satisfaction, no data on training periods are given.

Need for Competent Instructors. It may be observed here that the fundamental weakness of using instructors, at least in this mill, was always the difficulty of obtaining competent people. The qualifications for a good instructor are approximately the same as those for a foreman.

As the third shift built up and began to run more smoothly, the number of trainees naturally decreased until, usually, there were only three or four girls in training at any one time, and occasionally there were periods during which there was none at all, thus making an instructor unnecessary.

Non-Segregated, Foreman Instructs (The Success).

In the meantime, a foreman with long experience who took considerable pride in his training program was placed in charge of the third shift spinning. Even when there were as many as eight or ten girls in training at one time, he did not use an instructor.

Instead, he placed them for a few nights with selected spinners, and then placed them on one or two sides, making his section men responsible for the trainees on their jobs, and working with them himself.

The training periods of representative girls who learned under this set-up are given in Figure 6. These figures are not directly comparable with those in Fig. 4 and Fig. 5 because, at this time, the running of the work had improved a great deal, the girls were left on the same sides throughout their training period when possible, and they were given a full job on the same or similar sides. However, even with these reservations, it was evident that this training was most successful.

Comments. The foregoing discussion of our experience shows quite conclusively that on-the-job training, without instructors, can be highly satisfactory, given a foreman who takes the same pride in his training program that he does in his production and quality.

However, the foreman should not be loaded with too many trainees at one time, and they should be brought in at the rate of not more than two or three a week. If, in unusual circumstances, he should find himself with too many learners at any particular time, an experienced spinner can be assigned to instruct for a short period.

Looking back over the entire four or five years of experience here described, it appears likely that the special training methods might have been avoided during at least a large portion of the time if the overseer and secondhands could have been made to appreciate the importance of their training programs and could have been induced to give them the proper time and attention.

Supervisor is Key Man in Training. Similar results were later attained on the other skilled jobs. The degree of success achieved seemed to depend almost entirely upon the interest and skill of the production supervisors, so long as they were not burdened with too many trainees at one time ond so long as trainees were not brought in too many at a time.

The writer has become convinced, after spending four years as training supervisor and five years as a production supervisor,

Spinner Training Time: Non-Segregated, Foreman Instructs (Fig. 6)

Weeks in Training

Trainee	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
NO. 1	0	2	3	5	7	7	8	10	*						
NO. 2	1	3	4	6	6	8	8	8	9	9	9	10	10	*	
NO. 3	0	3	4	6	6	7	9	9	12	*					
NO. 4	2	4	6	7	8	8	8	12	*						
NO. 5	0	3	4	8	10	10	10	12	*						

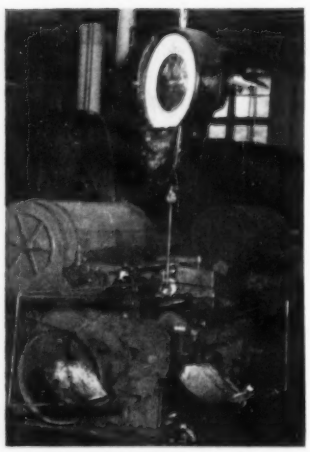
*First week on full job

Number of Sides Each Week

that training is a function of the production supervisors; that taking it away from them works an injustice; and that a foreman's inability or unwillingness to carry on a successful training program should be regarded as a weakness at least as serious as his failure to get production or quality.

If a mill is fortunate enough to have a training supervisor, the responsibility for the training program can be delegated to him by the superintendent with no loss of authority by the departmental supervisors, just as the responsibility for production is delegated to the assistant superintendent. This should still leave the training supervisors time to conduct a program of supervisory development, particularly in the field of teaching how to train.

A companion article, by the same author, dealing with getting new employees started and reducing labor turnover, will appear in an early issue.



Picker Doffing Simplified

A modified cradle for picker lap scales permits the picker operator to roll laps off the picker and onto the scales without lifting the lap. The altered lap scale cradle, shown in the accompanying photo, has simplified manual handling of laps in the mill using this device. The operator also swings the scale around and places the lap in the lap rack with a minimum of movement and effort.

Full-Fashioned Hose

FOR MORE than four years, Wisteria Hosiery Mills, Inc., Gastonia, N. C., has been using a quality control system which involves the use of daily hosiery production rating charts. These charts, which are posted on the plant bulletin board, clearly show exactly how every production employee stands with reference to quantity and quality on the job to which he is assigned.

The first step in the use of rating charts is the establishment of standards for quality for each operation in the mill. For example, our established standard for the knitters is one bad stocking for every two dozen pairs knitted. In looping, we allow one bad stocking for every ten dozen pairs, and we allow one reseam for every two dozen pairs seamed.

These standards, as well as the standards for inspectors, menders, and finishing operators, will differ from mill to mill, but in setting them up management should be careful to establish standards that are high but easily attained by conscientious and skilled operators.

Master Ticket. Inspection records must be carefully kept in order that the production rating chart may be posted. We use a master ticket (see accompanying illustration), called a production card, which is attached to each batch of stockings that leaves the knitting department. This card is designed so that it shows the name of the knitter or knitters, the looper, seamer, and inspector. The report is filled out by the inspector and includes the number of stockings which are "firsts," the number requiring various types of reworking, and the number of "seconds" and "waste." Data from this report are then used to fill out the daily hosiery production record.

Production Record. The production record is a tabular form designed so that the names of the operators in the various departments are listed in a vertical column at the left, and each operator's production record for each day is listed in the appropriate column to the right of his or her name. Large numbers indicate dozens of pairs of hose, and small underlined numbers indicate individual stockings.

In the sample sheet (see accompanying illustration), only one name is shown under each department. Actually, several of these pages are required to list the operators in any one of the departments; the sample merely illustrates the recording system used. On the first line opposite the operator's name is a figure showing the total production of that employee.

The inspector fills out the production card from which these data are taken; therefore, this does not represent the operator's actual total for the day but the card does show the total of his production which was inspected. Inspection may run a day or two behind actual production, but the figures will average the same over a period of time.

Imperfections. The second line shows the number of imperfections which are credited to the operator. For example, a knitting imperfection can be attributed only to the knitter; a looping flaw can be attributed to no one but the looper.

On the third line, opposite "picks" appears the number of picks or pulls in the sets on which a specific operator worked and which were inspected that day. The stockings have gone through knitting, looping, and seaming before they reach the inspector; therefore, these picks or pulls might be the responsibility of any of the three operators who worked on them. Definite responsibility cannot be established on the records of one day, but over a period of a week or more, the guilty party will show up by being consistently on the production record with a high number of picks beside his or her name.

Production Rating Charts

Show quantity and quality of work produced.

By SAM BOYER
Wisteria Hosiery Mills, Inc.

EXCLUSIVE

It is, however, on the "bad knitting," "bad looping," and "bad seaming" that the finger of responsibility points most clearly. It is here that the operators are working against the set standards.

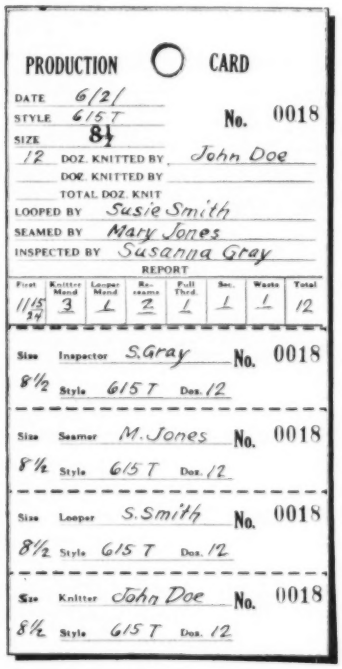
Note that in the sample John Doe, a knitter, is well within his standard on the first week. He has only 15 bad stockings credited to him out of 56 dozen pairs knitted. On that production he was allowed 28 bad stockings (one for every 2 doz. pairs). On the second week, however, he has 42 bad stockings in 54 dozen pairs. He was allowed only 27 bad stockings for his production, so he "owes" the mill 15 stockings. Although different mills use different methods to have the employees make up bad work, one way would be to have him knit these 15 stockings without credit to his production card.

Any time any operator's imperfections total more than the standard allowed, the weekly total of his bad work is shown in red or by a circle around the figure. This calls attention to his poor work when the record is placed on the bulletin board.

Supervisor Reinspects. Inspectors, menders, and final inspectors and pairers are rated the same as operators. One of the supervisors reinspects a portion of the work each day and fills out a form to use in making up the daily production rating. Standards must be set for this work also.

We have found that this system works very well in our mill. The records provide a clear picture of the standards the employees are meeting or failing to meet, and this system seems to act as an incentive to better work.

One big advantage we have found is that the system provides accurate records of the quality of every employee's work over any length of time so that we know just what each can and should do.



PRODUCTION CARD

DATE 6/2/
STYLE 615 T
SIZE 8½
No. 0018
12 DOZ. KNITTED BY John Doe
DOZ. KNITTED BY
TOTAL DOZ. KNIT
LOOPED BY Susie Smith
SEAMED BY Mary Jones
INSPECTED BY Susanna Gray

REPORT

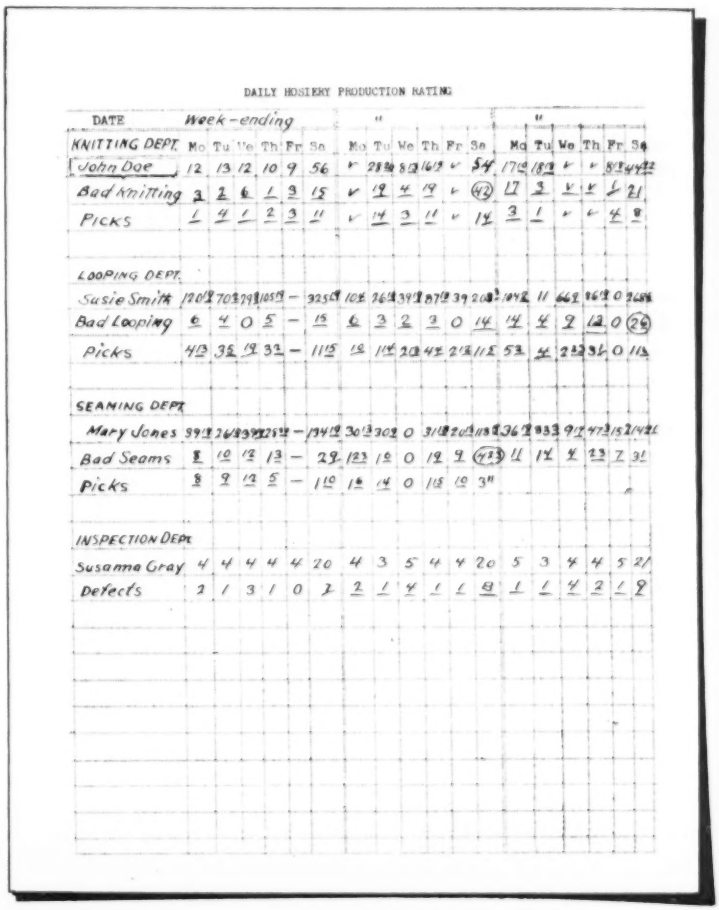
First	Knitter Mend	Looper Mend	Re-seams	Full Thrd.	Sec.	Waste	Total
11/15 24	3	1	2	1	1	1	12

Size 8½ Inspector S. Gray No. 0018
Style 615 T Doz. 12

Size 8½ Seamer M. Jones No. 0018
Style 615 T Doz. 12

Size 8½ Looper S. Smith No. 0018
Style 615 T Doz. 12

Size 8½ Knitter John Doe No. 0018
Style 615 T Doz. 12



DAILY HOSIERY PRODUCTION RATING

DATE Week-ending " "

KNITTING DEPT.	Mo	Tu	We	Th	Fr	Sa	Mo	Tu	We	Th	Fr	Sa	Mo	Tu	We	Th	Fr	Sa
John Doe	12	13	12	10	9	56	✓	28½	8½	14½	✓	54	17	18½	✓	✓	8½	44½
Bad Knitting	3	2	6	1	3	15	✓	9	4	19	✓	(42)	17	3	✓	✓	✓	21
Picks	1	4	1	2	3	11	✓	14	3	11	✓	14	3	1	✓	✓	4	8
LOOPING DEPT.																		
Susie Smith	12	12	7	7	9	8	10	10	6	2	3	9	7	9	3	9	2	0
Bad Looping	6	4	0	5	–	15	6	3	2	3	0	14	14	4	9	12	0	(26)
Picks	43	35	19	32	–	115	15	14	20	42	21	115	53	4	23	32	0	113
SEAMING DEPT.																		
Mary Jones	99	12	24	39	22	57	–	194	30	30	2	0	31	8	20	11	8	36
Bad Seams	8	10	12	13	–	29	12	15	0	19	9	(72)	11	14	4	23	7	31
Picks	8	9	12	5	–	110	14	14	0	15	10	3						
INSPECTION DEPT.																		
Susanna Gray	4	4	4	4	4	20	4	3	5	4	4	20	5	3	4	4	5	21
Defects	2	1	3	1	0	7	2	1	4	1	1	9	1	1	4	2	1	9

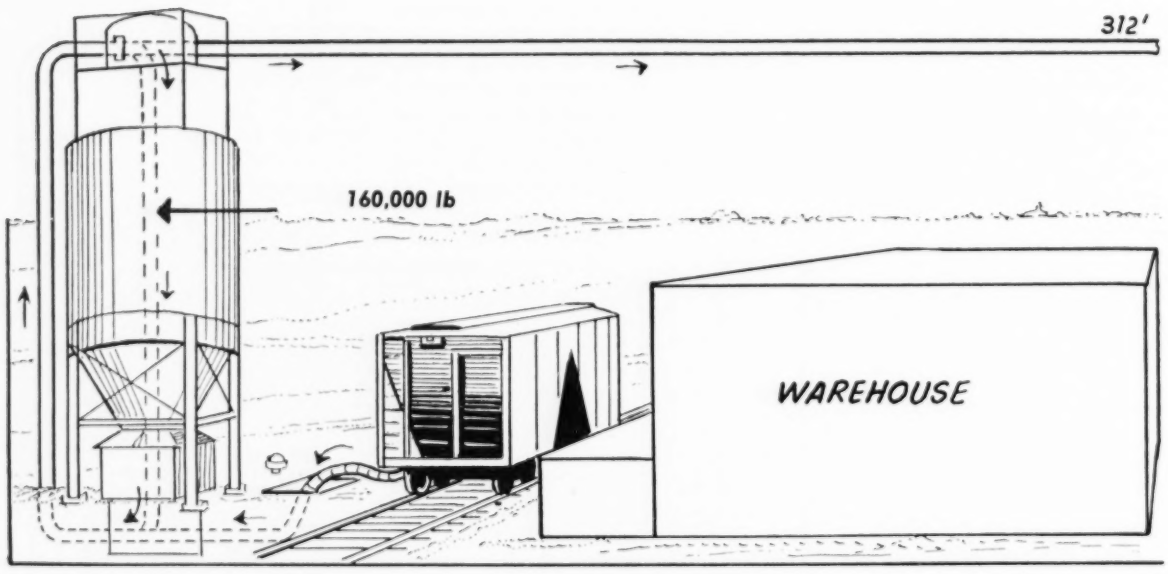
Bulk Starch Handling

Staff Prepared
EXCLUSIVE

THE Pell City, Ala., plant of Avondale Mills is using bulk starch in its slashing operation. Formerly starch was received in bags in freight car load lots; now a special pellet or grit thick boiling starch which gives the same viscosity reaches the mill in railroad hopper car, where it (60,000 lb) is unloaded by one man in about four hours. Before, an 11-man crew worked 4½ hours to unload the bags and carry them to storage.

Other savings: Cost of the starch is at pearl price; 15 cents a hundred below the paper bag and 30 cents below the cloth bag price.

Here is how the system operates (follow numbered pictures which relate to position on the drawing):



1. Hopper car with Staley special grit or pellet starch on siding, has flexible metal tube attached, feeds starch by vacuum to 160,000 lb storage tank or silo (at right in picture and left in sketch). By-pass valve at top of tank is adjustable so starch will feed to storage tank or can be routed to slasher room.

2. Twin nozzle hopper-bottom car unloading unit attached to hopper car and feeding to storage tank intake; hopper cars are built in two sections and hose must be trans-

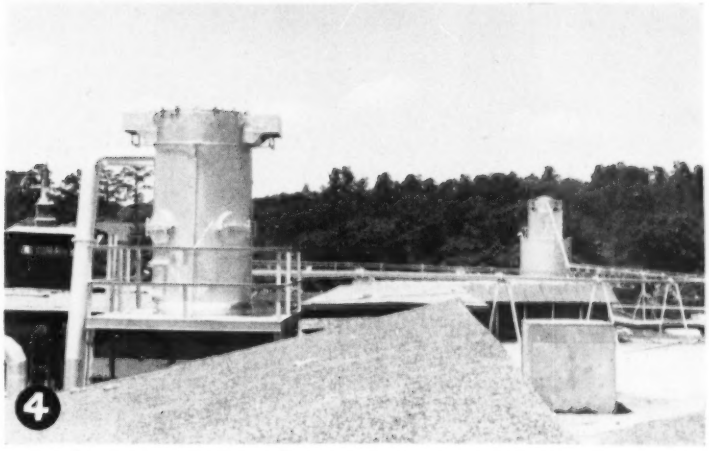
The bulk starch handling system was designed and manufactured by Fuller Company, Catasauqua, Penna. Special grit or pellet starch is used because it will flow through the system, will not bridge in car or silo, and reduces dust conditions. Hopper car arrangement was worked out with the cooperation of the Illinois Central Railway.

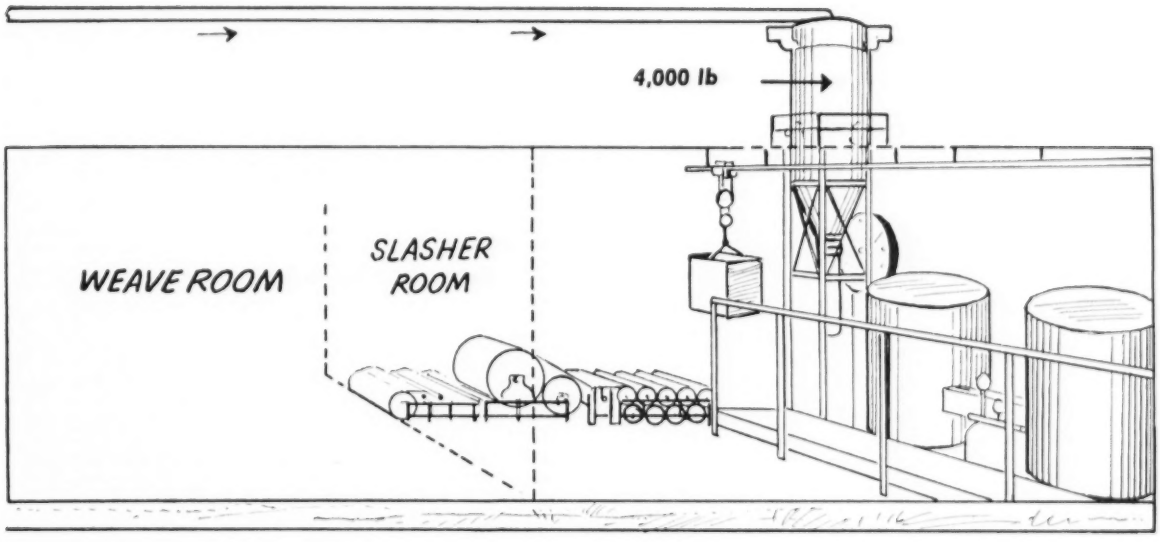
at Avondale

ferred from one to other.

3. Weight of unloading unit requires extra helper when being placed under car; one man can then "observe" unloading.

4. As starch is needed in 4,000 lb storage tank at slasher room, system is started and starch moves from large storage tank to slasher room storage (automatic cut-off when tank is full); in transit it

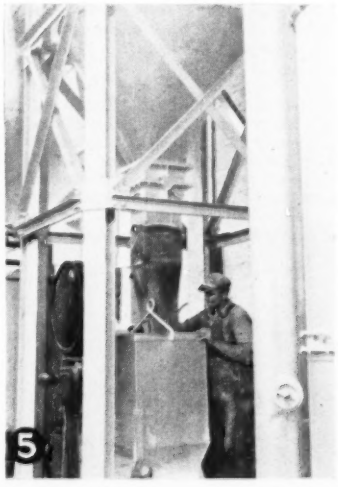


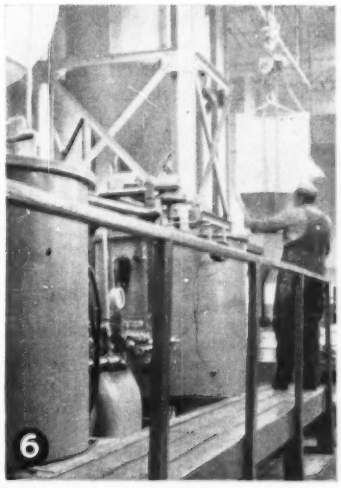


passes through receiver unit, conveying line, and filter. In this photo, filter equipment is in foreground, conveyor pipe over roof, and large storage tank in background.

5. As needed for sizing operation, starch is withdrawn from small storage tank by opening slide door, falls into bucket resting on scales.

6. Loaded bucket is moved by chain hoist to cooking kettles where it is dropped through bottom gate in bucket. From mixing kettles the size is homogenized by Gaulin equipment and passes to storage kettles to be used as required.





THE QUALITY CONTROL STORY was presented in two consecutive editions of "The News." Front cover and tear sheet from the first issue are shown at left; at right are facing pages from the second issue.

"Quality Is Everybody's Job"

PEOPLE in Alexander Smith's Carpet Division are more quality control conscious now than ever since two consecutive issues of "The News," an employee publication, were utilized to emphasize that "quality is everybody's job."

In the first issue the quality control staff was introduced to the readers of "The News" by reproduction of a group photograph which impressively demonstrated the scope of the quality control program at Smith, its organization, and duties (see tearsheet from "The News" in illustration above). Accompanying this was the following easy-to-understand management message showing how quality control works to the advantage of all the employees; how it builds up consumer respect for the product, safeguarding their jobs; and how the control staff does not function as police, spies, etc., but only as administrators for product improvement.

"The Quality Control Department has been set up to coordinate all quality activities towards the goal of better quality at economic cost. To achieve this, it continuously determines whether the raw materials we buy, the operations we perform and the finished carpets and rugs are satisfactory quality wise. The Quality Control Department issues standards and specifications for every operation of production, for the raw materials, and for all the finished products. These standards are prepared in collaboration with the manufacturing departments and the Laboratories.

"Daily, by Laboratory tests and by observations in each department, the Quality Control people determine how well the operations match the standards. If something isn't right, it is the job of Quality Control to see that the departments concerned take action to correct the condition. A process or operation may not be doing a good enough job so that our product is not equal or better than competition. In this case, Quality Control gets the Laboratories and Engineering Departments to work on process improvements.

"Quality Control appraises the finished carpets and rugs in the Finishing Rooms to see that no imperfect carpet gets out to our customers as perfect. Quality Control's job is a big one and an important one to all of us at Smith, for it is through the quality standards they set and the vigilance by which they watch our operations that our future sales will depend. But *quality* is not their job alone.

"*Quality is everybody's job.* The standards of quality can only be maintained and improved if everybody, who in any way contributes to the manufacture of Smith carpets and rugs, works at it constantly. The Quality Control Department cannot alone be responsible for the quality of the product which our customers demand. No one department could possibly do that. Obviously, there cannot be a check of each minute's work that goes into the many processes in the making of rugs and carpets. The responsibility for quality has always been, and will always be, that of the thousands of men and women who work in the mill—and their foremen.

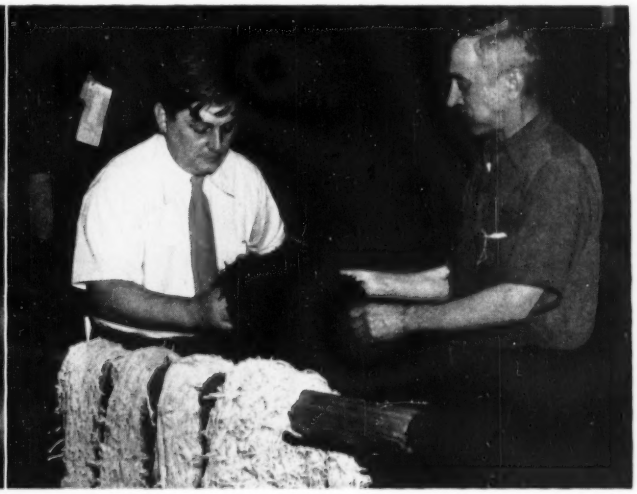
"*What does Quality Control mean* to Smith employees? It means that we have a coordinated set of standards for every production operation in the mill, and that we have quality specifications which every roll of goods must meet before it can leave Yonkers. It means that we have a yardstick by which to measure the quality of our work. It means that on the Smith team we have people whose job it is to point out our mistakes and show us ways of correcting them. It means that while each of us strives to improve his own job performance, an alert group of men and women are on the scene to see that no one else along the line lets us down. Quality Control means that Smith goods can achieve higher and higher standards of quality, hence better customer acceptance and more sales. As customer acceptance and sales climb, it can ultimately mean more jobs, more opportunities for advancement and greater security for us all.

"Remember, *quality is everybody's job!*"

The following issue of "The News," with the theme "Cooperation for Quality," contained a three-page pictorial presentation depicting how members of the quality control staff "go about their work which is aimed at . . . production of top quality goods at economic costs."

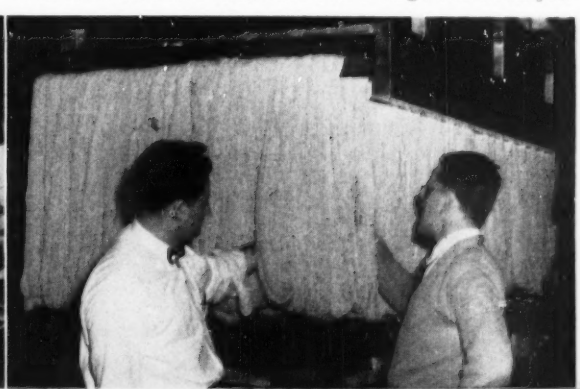
Editors of "The News" have given permission for these same photographs to be reproduced in TEXTILE INDUSTRIES. They are presented on the next three pages. Note that the opposite page contains scenes from the yarn mill; the Axminster mill and velvet mill are featured on the third and fourth pages respectively.

1. **Left:** Leo Lachowicz, quality control supervisor, inspects raw wool for burrs or tar contamination. "Quality control starts at the very beginning of production," Mr. Lachowicz points out. "Burrs interfere with carding and spinning efficiency, cause ends down and objectionable piecing, and show up as distracting spots in the finished goods." **Right:** In the fiber preparation department, wool is checked again by Mr. Lachowicz as it leaves the dryers after scouring, this time for evenness of blend. "Natural color differences in the wool from lot to lot can lead to unevenly shaded yarn. This condition is responsible for non-uniform shades in the fabric."



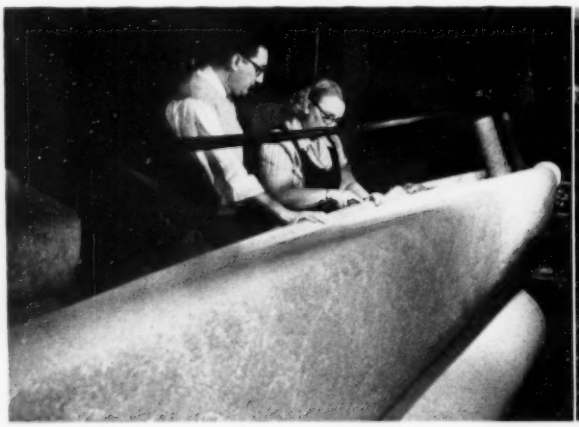
2. **Left:** "250 grains," reports Joseph Sakal (left) roving weigher, as he checks weight of a 50-yard sample of carded roving. "Right on the nose," observes William Milnarik (right), quality control supervisor. "We make frequent checks of roving weight," Mr. Milnarik says, "and roving outside of our specified limits is sent back to the cards. Thick and thin yarns have a bad habit of showing up as streaks in the carpet." **Right:** "Bill, have you seen the soft twist yarn coming through in lot A56X? Better check the redoublers," Michael Bednarchak (right) advises Mr. Milnarik. "It probably is due to slipping bands. We'll have that corrected immediately because slack twist will raise cain with our frieze," Mr. Milnarik tells Mike.

3. **Left:** Mr. Milnarik continually makes spot checks of yarn for possible twist defects. Defective yarn is destroyed and condition reported to spinning foreman. Variations in twist lead to undesirable streaks in velvet weaves. **Right:** Edward Field, assistant general foreman of the dyehouse (left), asks Leo Lachowicz if he can detect any unevenness of blend in these skeins of white yarn just before they go into the dye kettle. "There's a bit of it," Mr. Lachowicz replies, "but this lot is going to be used for an Axminster pattern and won't show up." A shade difference would be easily noticeable if the yarn was to be used as a solid color over a large area of carpet.



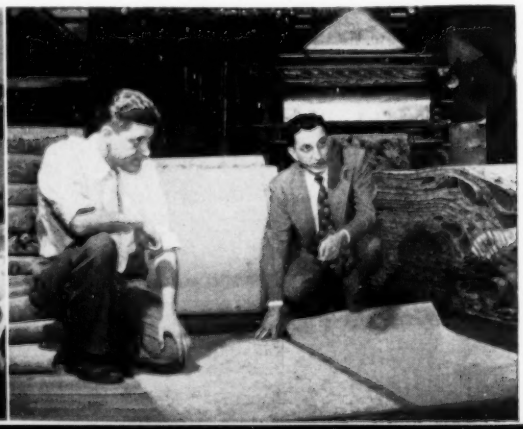
Quality Control in Alexander Smith's Axminster Mill

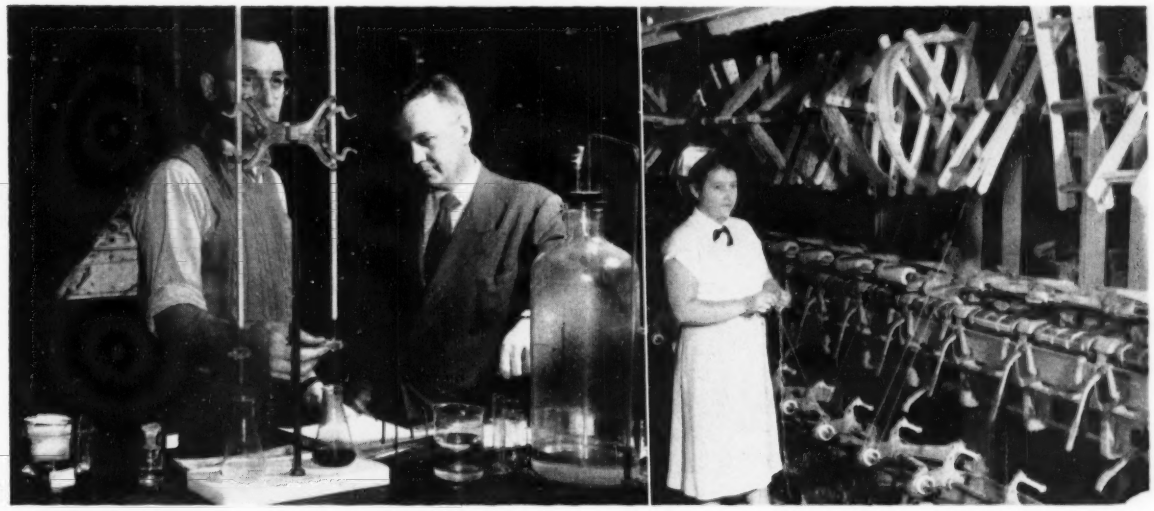
4. **Left:** John Dubravsky, quality control supervisor, makes a regular visit to the Axminster setting department where he checks yarn spools for color uniformity. "If there's any discrepancy, production is stopped and necessary replacements are made," he says. "Shade variations show up very quickly in two-color Ax patterns." **Right:** Harold Crimmins (right), quality control supervisor, makes a general check for color and weaving defects with weaver Stanley Murawski (left). "One of the faults we are always on the alert for is a missing tuft," explains Mr. Crimmins. "This will occur when a spool fails to dip properly or the tuft isn't combed up. Realignment of the spool will correct this condition. More serious is a mismatch of pattern or reversed spool in the setting rack. Unless detected before weaving, such a defect might require cutting of the roll in burling. A more common defect is a reversed draw of two ends. This is remedied right on the loom. If it does slip through, the defect is easily repaired in burling."



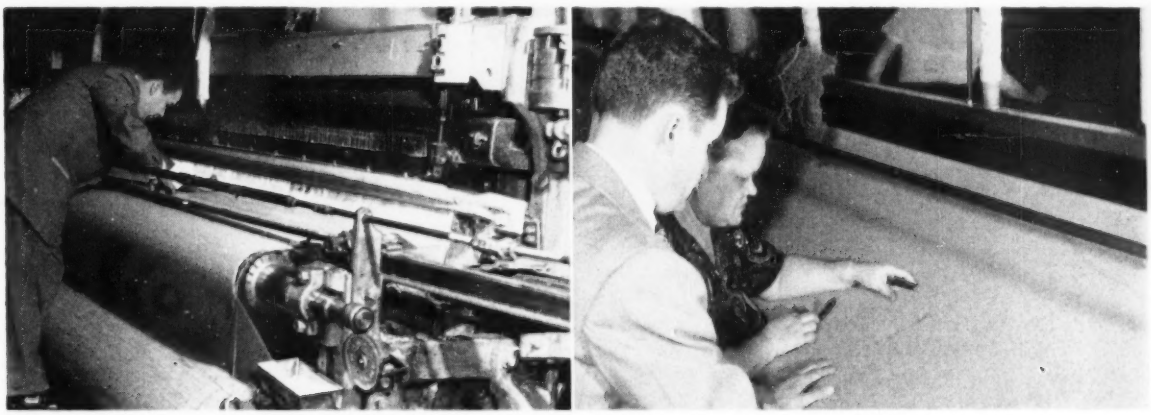
5. **Left:** Mary Sweeney, Axminster burler, asks Edward Mooney, quality control supervisor: "Have you seen this piece with the shoved tuft from loom 301?" Mr. Mooney promptly reports this condition to the weaving department. Stuffer and chain yarns will then be redrawn through the correct dent, thereby eliminating the defect. **Right:** John Kivel (center), quality control supervisor, aided by Charles Collings (left) and Herbert Fairel (right) spot defects in the weave on the final inspection platform. These defects are marked for reburling. Explaining his function, Mr. Kivel says: "After studying the frequency of occurrence of various types of defects in the different grades of goods, I can usually trace their origin and see that measures are taken to improve performance."

6. **Left:** Jesse de la Rama, quality control department standards manager, tells a group of trainee salesmen: "This surface-textured pattern is our latest. Clarity of texture is maintained by means of the control checks you witnessed on your tour of the mill. Perfectly uniform color and twist are a must for self-tone high and low pile textures." **Right:** Charles Andrews (left), general foreman of Axminster finishing, compares poor and good quality in two weavings with Joseph Nardozzi (right), quality control foreman. "The improved appearance of this carpet is due to changes we've made in steaming and shearing," Charlie tells Joe.



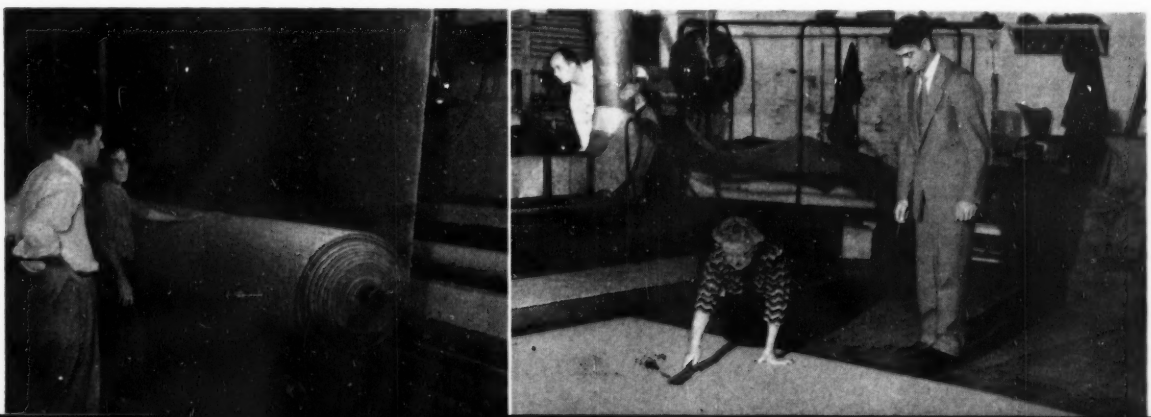


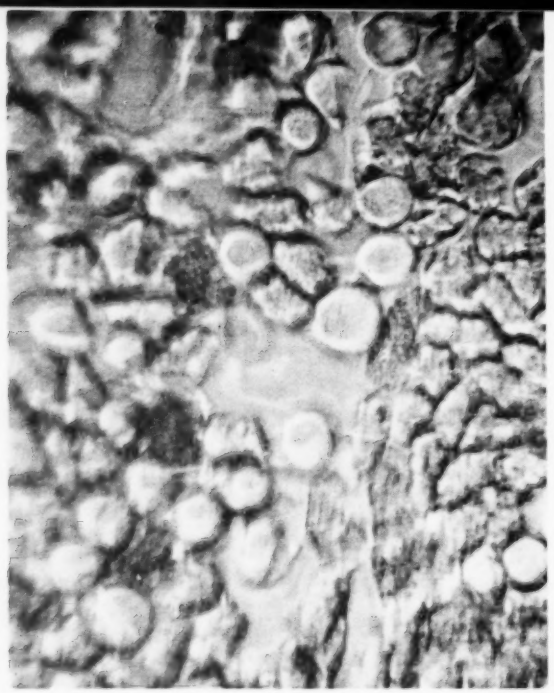
7. **Left:** John Kravetz (right), quality control foreman, stops to watch Robert Dundas check soda ash content in scouring tubs in the velvet mill. Titration is made every half hour. Yarn is scoured prior to twist setting. "The skeins must be clean," explains Mr. Kravetz, "as well as uniform in pH or else an inferior twist setting will result. Solution control in scouring provides a ready means for maintaining the required uniformity." **Right:** Pearl Swantek carefully clips an untwisted end from a skein before making a weaver's knot and winding yarn on cheese. If she wasn't diligent in clipping off unravelled ends, they would appear as streaks several feet long in the finished frieze carpet.



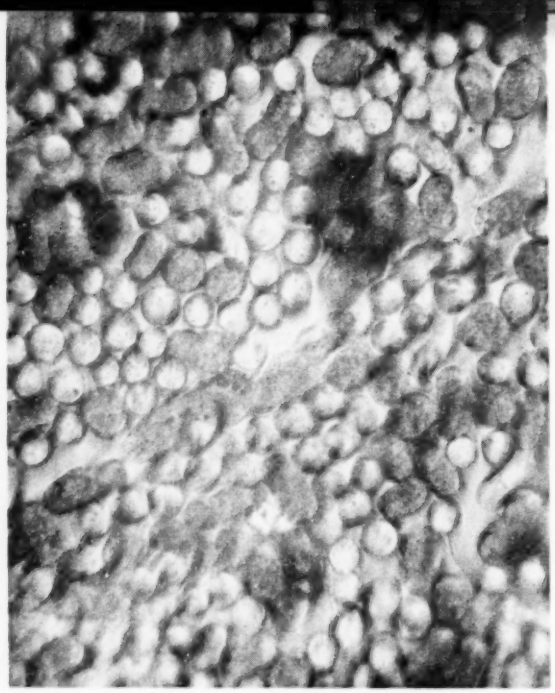
8. **Left:** Louis Pietrowski, quality control supervisor in the velvet mill, checks a 12-foot loom which was reported as responsible for faulty reed spaces. "Velvets are very sensitive," Mr. Pietrowski points out. "The slightest defect becomes glaring in the finished piece. Seconds can be avoided only by vigilance and cooperation of all production personnel." **Right:** Ann O'Donnell, burler in velvet finishing, shows David Coyle, quality control supervisor, a major defect in velvet roll caused by a large knot in yarn which made an end break. "Dave, I don't think this can be repaired," she says. "O.K., Ann, mark the piece and we'll cut the roll when it reaches final inspection."

9. **Left:** Top quality velvet is inspected at shearing machine by Harry Skroback (right) and David Coyle (left), quality control supervisor. Shear marks and evidence of dulling knives are looked for. "We examine shear settings quite frequently," says Mr. Coyle. "We don't want an uneven pile." **Right:** A minor soil spot on piece of carpeting is cleaned with brush and solvent by Ellen Haley at final passing area. "How's it coming out?" asks Bob Asman, quality control supervisor. Mr. Asman classifies the goods after repair work is finished. This is the final, thorough check for the carpeting before it is shipped to dealers.





MAGNIFIED APPROXIMATELY 800X. 36/2 yarn containing 10% acetate, 60% viscose, and 30% nylon. Average denier of blend is 1.54; fibers per cross section of singles, 96. This yarn spun good.



MAGNIFIED APPROXIMATELY 300X. 8/2 yarn containing 50% Vicara, 50% Dacron. Average denier of blend is 3.76; fibers per cross section of singles, 177. This yarn spun good.

Factors Affecting Spinning Limits

By E. B. GROVER and D. S. HAMBY
North Carolina State College School of Textiles

EXCLUSIVE

THE SPINNING LIMIT of a yarn is the finest yarn number that can be spun economically from a given fiber or blend of fibers. It is not always a definite or exact number, for the spinner knows he progresses from a good spinning job on a coarse yarn to a job with excessive end breakage when he uses the same stock for a finer yarn. Somewhere in this span he reaches the trouble area, and then he applies all the tricks in the bag to improve the running of the yarn: tries different travelers, tries different setting between pigtail and bobbin, checks roll set-up, changes draft by changing roving, checks over the frame for out-of-set spindles, changes top rolls. In short, he "babies" the job to produce.

The spinning limit for synthetic staple seems to be more critical than for cotton. It is quite likely that the natural waxes, as well as the peculiar spirality of the flat ribboned-shape of the cotton fiber, contribute to giving a higher and more variable limit to cotton, and one that is harder to predict.

What Determines Spinning Limit of Synthetics? In the final analysis, the spinning limit is determined by the number of fibers in the cross section of the yarn. But, in turn, the number of fibers that is needed in this yarn in order to get a good spinning job is affected by other factors: fiber length, strength and fineness, crimp, and finish. Generally speaking, fewer fibers are needed, or finer yarn can be spun, with the finer, longer, and stronger fibers having crimp and effective finish.

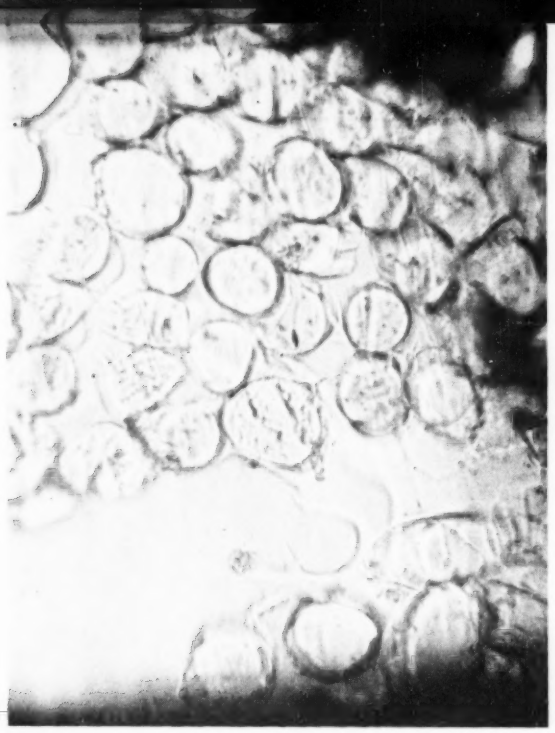
Figuring Fibers in Yarn Cross Section. The synthetic fibers are manufactured to certain denier sizes. The yarn spun from synthetics is numbered by the English cotton system. Thus it becomes necessary to convert the yarn number to denier number:

5315 divided by yarn number gives the denier.

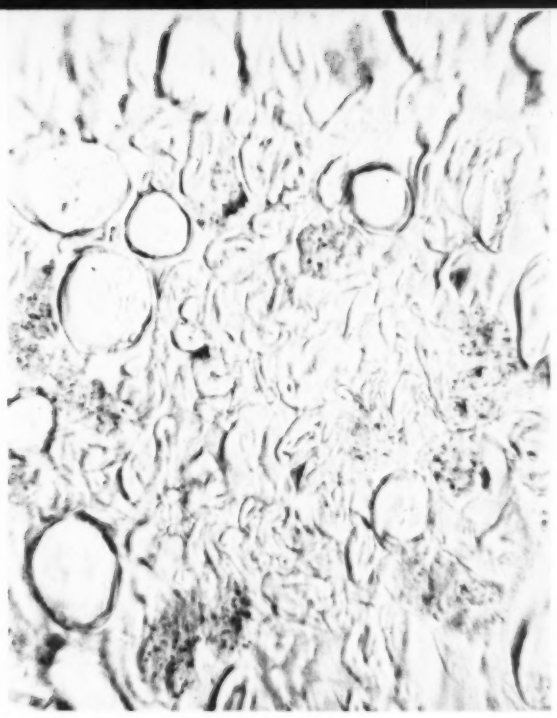
For example: 20s cotton yarn number is spun. What is the equivalent denier number?

$$5315 \div 20 = 266 \text{ denier}$$

To convert a denier size into



MAGNIFIED APPROXIMATELY 600X. 26/2 yarn containing 40% wool, 60% Dacron. Average denier of blend is 2.83; fibers per cross section of singles, 72. This yarn spun good but could not have spun a much finer yarn unless it was very even.



MAGNIFIED APPROXIMATELY 500X. 20/2 yarn containing 1/3 Sea Island cotton, 1/3 acetate, and 1/3 wool. Average denier of blend is 1.68; fibers per cross section of singles, 158. This yarn spun good.

SPINNING LIMITS, how to figure the number of fibers in a yarn cross section, how many fibers are needed, and the relationship of these elements to evenness are all covered in this most up-to-date article on the subject.

cotton count, divide the 5315 by the denier. Next, to get the average fibers in the cross section, just divide the total denier to be spun by the individual fiber denier.

For example, suppose the 20/1 yarn (266 denier) is spun from 1½ denier stock. The total fibers in the average cross section would be:

266 denier ÷ 1.5 = 177 fibers

What About Man-Made Fiber Blends? Blends are particularly important to check for spinning limit, for most frequently different deniers of the same or different fibers are combined. So, for blends, get the average of the denier being used to spin the yarn, and then calculate the fibers in the cross section.

The average denier of the blend is figured this way:

$$\frac{\text{per cent of fiber A}}{\text{denier of A}} + \frac{\text{per cent of fiber B}}{\text{denier of B}} + \text{etc.} = \frac{100}{\text{av. den.}}$$

Suppose, for example, that this is the blend:

40 per cent of 3 denier viscose
40 per cent of 3 denier acetate
20 per cent of 1½ denier nylon

The average denier is calculated this way:

$$\frac{40}{3} + \frac{40}{3} + \frac{20}{1.5} = \frac{100}{\text{average denier}}$$

Average denier = 2.5

If 20/1 yarn, which is equal to 266 denier, is spun from this blend, then the fibers in the cross section are:

$$\frac{266}{2.5} = 106$$

How Many Fibers Are Needed? The mill can determine from experience the number of fibers needed to spin yarn economically on its particular yarn layout. However, there are some indexes that can provide the starting point and background.

For 3 denier, 1½-inch staple, no-crimp stock, the minimum number of fibers in the cross section can be reduced below 70 (to about 65 for 1½ denier).

For deniers coarser than 3 (1½ inch), the fibers needed will be greater than 70.

The extreme limits are usually 50 for the finest, strongest, longest, crimped staple, up to 90 for the coarsest, shortest, weakest, non-crimped staple.

Determine for each yarn to be spun what the average number of fibers in the cross section is, record the "spinnability," and soon the danger limits become apparent.

Example: For 3 denier, 1½-inch staple, using 70-fiber limit:

The average denier is 3.0 for 1½-inch staple; for a total of 70 fibers needed, the total spun yarn denier is:

(70) (3) = 210 denier

(Continued on next page)

Progress in Reducing Carpet Soilage

The problem of soilage of carpets after floor wear is reported to be nearer solution as a result of research and development work carried on by Celanese Corporation of America in association with leading rug and jute manufacturers.

Fred Fortess and Charles E. Kip, of the Celanese research laboratories at Summit, N. J., have made a technical study which revealed that the standard carpet manufacturing process may result in oil on the carpet surface. The use of petroleum or fatty carding oils, as well as the oily jute for backing, was found to be detrimental to the soiling characteristics.

The Celanese research team pointed out that certain waxy lubricants can be successfully substituted for carding oils. These materials, it was said, block the effect of excessive jute oil while not increasing the soiling by other mechanisms.

The results of the study are cited as an example of what can be accomplished when raw material suppliers and manufacturers of finished products pool their research and manufacturing techniques in an effort to solve problems.

This is a cotton yarn number of

$$\frac{5315}{210} = 25.3/1$$

Interpret the results this way:

Using an average of 3 denier, yarns coarser than 25/1 should spin very satisfactorily; when progressing to finer yarns, end breakage increases rapidly. Only by using great care, slower speeds, etc., could 30/1 be spun economically (this is 20% finer).

By using 2-inch or 2½-inch staple, or by using crimped staple, the limit could be increased beyond the ultimate of 30/1.

Another example that shows the value of this approach is this:

Suppose we need a fabric with the warp yarn to be 36/1 cotton count; the blend is to be of 30 per cent wool (that can be considered for this example as 5½ denier) with 70 per cent viscose staple. Mill experience shows that for the conditions, there should be 66 fibers in the yarn cross section.

What denier viscose can be used?

First, the denier of 36/1 is:

$$5315 \div 36 = 148 \text{ denier}$$

Second, the average denier per filament must be (to have the 66 fibers in the cross section)

$$148 \div 66 = 2.24$$

Third, the denier of the viscose to be used is

$$\frac{30}{5.5} + \frac{70}{\text{den. vis.}} = \frac{100}{2.24}$$

Denier of viscose is 1.79

This can be made* by using two-thirds of total viscose of 1½ denier and one-third of 3 denier; so in final blend, 47 per cent is 1½ denier, 23 per cent is 3 denier, and 30 per cent is wool.

Another Pay-Off for the Mill Producing Even Yarn. Yarn evenness has gained its true stature as the measure of quality, standing with yarn number control, and strength as the important characteristic most frequently required.

One advantage in producing the most even yarn possible, and one which has been overlooked by many, is the increase in spinning limit.

Any normal "perfect yarn" has a variable number of fibers in its cross section. This variable number is, according to Martindale in England, equal to $\frac{100}{\sqrt{N}}\%$ where N is the number of fibers in the average cross section.

For example, for 70 fibers, the most "perfect" yarn would have 100 divided by the square root of 70, or a 12 per cent variation in the number of fibers. In other words, the unevenness rating would be 12 per cent over or below, or a total of 24 per cent variation.

But if we consider the actual unevenness of the yarn, it becomes apparent that there must be a rather large variation in these cross-sectional fibers. Suppose that for a given blend of 3 denier, the average number of fibers for spinning limit control is 70, and that 25/1 yarn is being spun. This yarn, on analysis with an evenness tester (like the Pacific, Uster, or Brush), shows an average of 100 per cent variation, which means that the yarn varies plus or minus 50 per cent. In effect, there is 50 per cent variation above or below the number of fibers at different cross sections. With 70 as the average number of fibers, a 50 per cent reduction drops the yarn to 35 fibers in the thin spots. If the yarn spins satisfactorily, we can assume that the very minimum number (at thin spots) of fibers needed for normal spinning is 35.

Now suppose that all processes, particularly those involving drafting, are improved, so as a result the evenness rating is improved to 80 per cent, or plus or minus 40 per cent. If the same minimum of 35 fibers exists because the same blend is being used, then the average number of fibers can be reduced because of the improved evenness. The new standard for the minimum fibers needed is:

$$\frac{35}{1 - \frac{40}{100}} = 58 \text{ fibers}$$

The new spinning limit becomes for this 3 denier:

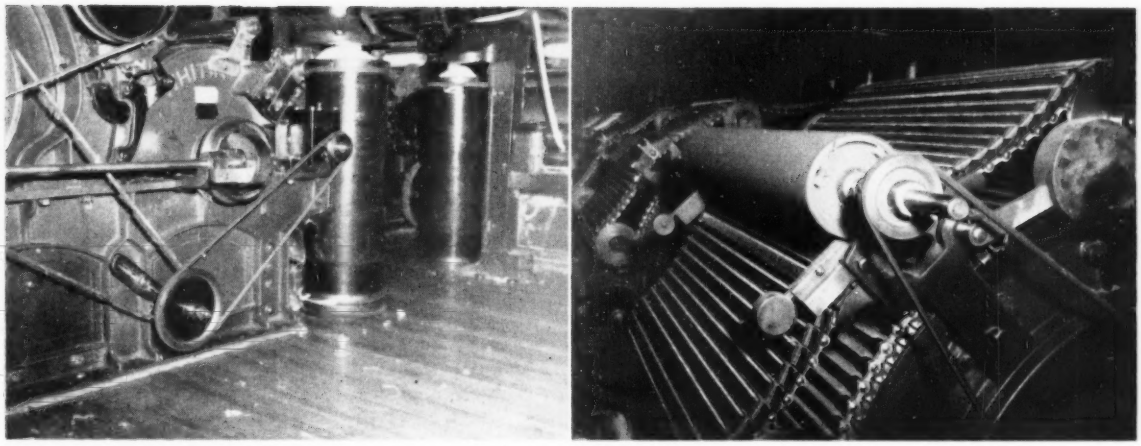
$$(3)\ (58) = 174 \text{ denier, or } 30.5/1 \text{ yarn}$$

If all yarns can be spun with the improved evenness rating, then the standard for spinning limit in terms of fibers needed can be changed.

Another way to evaluate the improvement in going from 100 per cent to 80 per cent unevenness is to note that the 20 per cent improvement in evenness means 20 per cent less fibers needed (from 70 to 56) and that 20 per cent finer yarn (from 25/1 to 31/1) can be spun.

* $\frac{\%\text{ of } 1\frac{1}{2}\text{ denier}}{1\frac{1}{2}} + \frac{100 - \%\text{ of } 1\frac{1}{2}\text{ denier}}{3} = \frac{100}{1.79}$

$\%$ of $1\frac{1}{2}$ denier $= 66.6$



CARD DOFFER COMB (left) with V-belt drive. Drum grinder (right) driven through a V-belt.

V-Belt Card Doffer Comb Drive

provides more uniform speed, simplifies cleaning

No slippage and greatly increased belt life are reasons for equipping all cards with the V-belt drive at Carlton Yarn Mills.

Staff Interview

EXCLUSIVE

CARLTON Yarn Mills, Inc., Cherryville, N. C., is using a V-belt drive on the doffer comb of about 50 cards. The first of these belts was installed four years ago, and the rest of the cards are being similarly equipped as the rope drives now in use wear out.

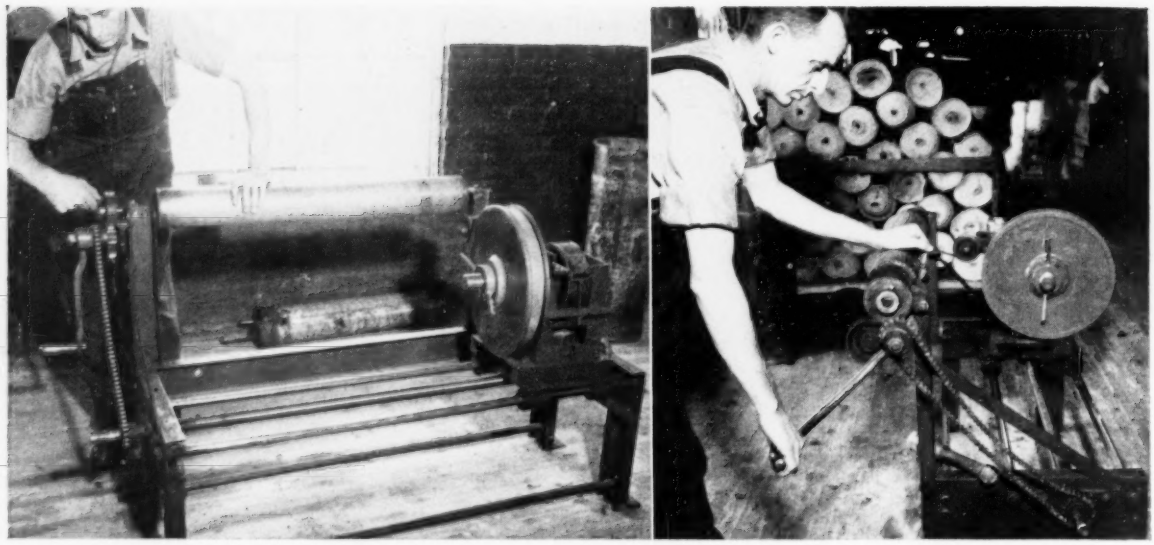
According to Garland Stroupe, overseer of carding, the V-belt drive has proved its value in several ways. The principal advantage is the even speed at which it drives the doffer comb. With the old type drive, ropes which were too tight or too loose would slow down the comb. Ropes would stretch with use and become frayed and lose their springiness, causing variations in comb speed. These problems are entirely overcome by the V-belt drive.

The rope drives had to be replaced every 18 months to two years, or less, while none of the V-belts—some of which have been running for four years—have yet needed replacement. The belts used at Carlton are Gates "A" V-belts.

Another advantage of the V-belt drive is greater freedom from lint and fly collection, which simplifies cleaning. The rope drives accumulated lint, particularly at the metal fastening. This sometimes caused the rope to jump off the pulley, and was a source of accidents, since it was a temptation for the card tender to pull the bunch of cotton from the rope. The V-belt is deeply seated in the pulley, and has no tendency to jump off when it is necessary to clean it.

No other changes are required on the card when ropes are replaced by V-belts on the doffer comb drive, since the grooved comb box pulley, binder pulley, and card cylinder pulley can be fitted with the proper type V-belt.

Drum Grinders. Successful application of V-belt drive to the doffer comb has led Carlton to adopt it for driving their drum grinders also. The advantages are the same as for the comb drive: no slippage, hence a uniform speed; and greatly increased belt life.



STRIPPED SAND ROLL is placed in bearings (left photo) by George Sims, and gear is fastened on shaft of roll to connect drive train. Right photo: Sand roll gears are used on apparatus to make gear train operate the drive worm at proper speed to assure correct traverse of fillet magazine.

Canton Cotton Mills have a special

Mill-Made Sand Roll Covering

Cost of replacement fillet for sand rolls reduced to less than half former costs by using mill-made roll covering machine.

Staff Prepared

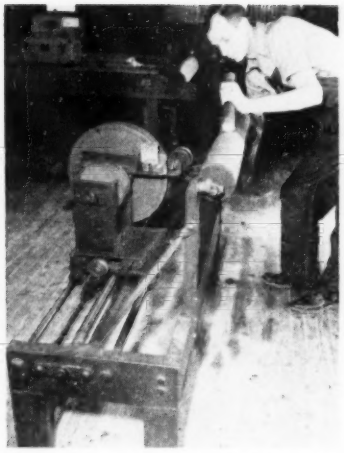
EXCLUSIVE

AFTER seeing a lathe modified for application of sand roll fillet, the management of Canton Cotton Mills decided to build a special machine to do the job because all of the lathes were needed in the machine shop for other uses.

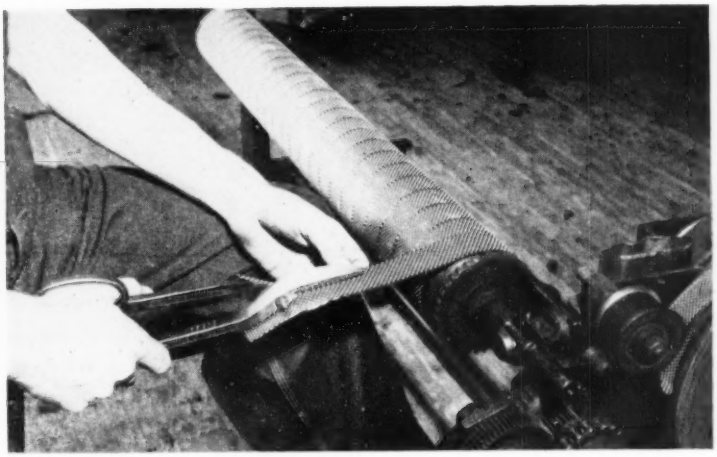
Manually applied fillet was noticeably buckling under pressure of the cloth, and oftentimes the fillet was broken upon running out only one warp on the fresh sand roll covering. Louis Jones, Jr., was overseer at the time, and he took the shop foreman to see the lathe machine because the sand roll re-covering costs were excessive.

The special-built roll covering machine is somewhat similar to a card clothing machine. The parts are made of cold rolled steel, flat iron, angle iron, and a few improvised bearings and gears. Sand roll gears are used on the apparatus to make the gear train fit the drive worm. The entire machine may be built for about $100, including materials and labor. One of these machines was built for each of the mills at Canton; one for 32″ looms in one plant, and one for 36″ looms in the other plant. There is no problem in changing the cradle to accommodate different size rolls; however, alterations would permit the apparatus to accommodate several different roll sizes.

The machine permits quick, economical, and accurate replacement of sand roll fillet, and a sand roll may be removed and replaced by a machine-covered roll in the same time formerly required to manually cover a sand roll on the loom. Fillet costs were reduced to less than half former costs by using the mill-made machine, and now the fillet stays on the roll un-



FILLET is 1½" wide and the sand roll turns one revolution while the fillet moves 1½". A roll may be covered by one operator in approximately 15 minutes. Note wood bumper used to keep fillet flush.



FINISHING the job requires hand tailoring the fillet by using a shear to assure proper fit for tacking at end of roll. Note exposed cap bearing receiver.

Machine

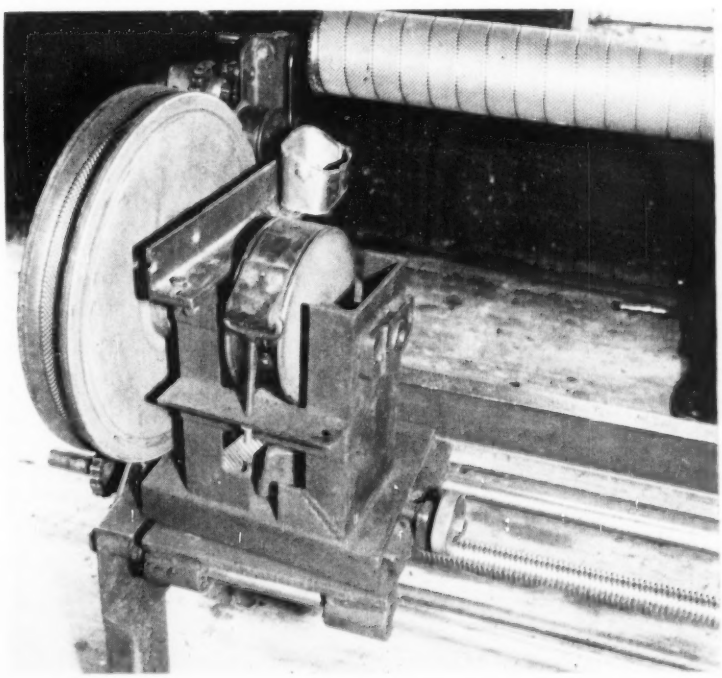
til it wears out.

A stock of covered rolls is maintained, and when the stock gets low the reed and harness man recovers an additional supply of rolls. The machine has been in service for several years, and no maintenance has been necessary to date.

The accompanying photos show the completed machine in operation and also show the details of construction. Upon completion, the machine was placed in service in the mill weave room where it would be close to the looms and also where the same temperature and humidity prevailed for re-covering the sand rolls. After several months of operation in this location, the machine was moved from the weave room to another room in the mill where conditions were similar but less congested. Now one man may cover many rolls in one day. At first an extra fixer operated the machine and covered the sand rolls after six or eight rolls had accumulated.

Formerly the loom fixer applied fillet at the loom by hand; however, the manual method of application did not provide even tension, and oftentimes the fillet was damaged before it was actually worn out. The operative usually wore a glove on one hand and employed a claw hammer to keep the fillet tight on the roll. Sometimes the fillet was cracked or broken by the claw hammer before the sand roll was placed on a loom, and the teeth or perforations on the fillet were sometimes broken or bent in applying the fillet.

FILLET MAGAZINE is equipped with adjustable brake to provide proper tension on fillet. Magazine must be returned to opposite end of traverse worm before another roll can be covered.



NEW PRESIDENT of the Southern Textile Association is T. I. Stafford, production manager at Clifton (S. C.) Mfg. Co.

URGENT NEED of the industry for more trained men was emphasized by retiring president D. A. Purcell of Fieldcrest's blanket mill.

DEFENSE BUDGET CUTS were defended by Congressman Charles R. Jonas (R., N. C.) in his address during the Saturday morning session.

Sell High School Graduates on

Purcell advised STA members at Blowing Rock

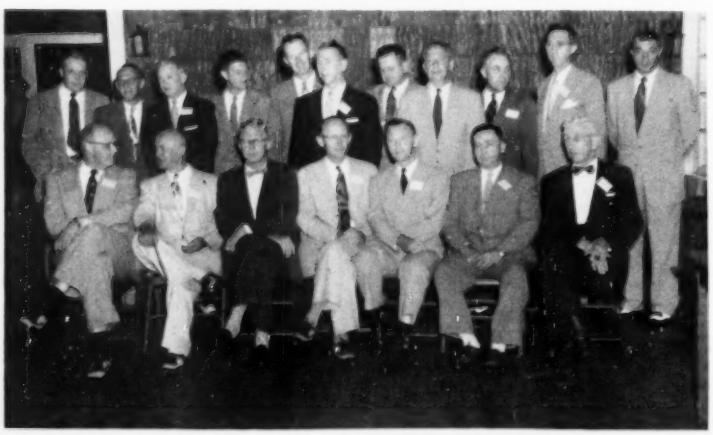
Staff Report

MEETING in its 44th annual convention at Mayview Manor, Blowing Rock, N. C., the Southern Textile Association elected T. I. Stafford, production manager for Clifton Mfg. Co., Clifton, S. C., to the presidency of the Association. Mr. Stafford succeeds D. A. Purcell, superintendent of Fieldcrest Mills' blanket mill at Draper, N. C., who was elected chairman of the Board of Governors.

J. L. James, manager, Erwin Mills plant No. 3, Cooleemee, N. C., was chosen as first vice-president; and J. A. Chapman, Jr., vice-president of Riverdale Mills, Enoree, S. C., was elected second vice-president.

Waste Control. Speaking on "The Supervisor's Responsibility for Waste Control," James I. Teat of Southeastern Engineering Co. reminded listeners at the opening business session on Friday morning that any material entering a plant or department and not reaching final production is waste. Some waste is necessary, but any amount over the minimum necessary to meet production and quality requirements is excessive waste.

Mr. Teat pointed out that waste costs per pound always exceed the cost of carding, and in many cases exceed the cost of processing stock all the way from opening through spinning. Savings made through reducing waste are exactly as valuable as equal savings in processing costs, and can usually be made



OFFICERS AND BOARD of Governors of Southern Textile Association, with speakers at Saturday morning session. Seated, left to right: **D. H. Roberts,** Lydia Cotton Mills; **R. T. Stutts,** Carolinian Mills; **J. A. Chapman, Jr.,** Riverdale Mills; **D. A. Purcell,** Fieldcrest Mills; **T. I. Stafford,** Clifton Mfg. Co.; **J. L. James,** Erwin Mills; **Smith Crow,** Erlanger Mills. Standing, left to right: **Hugh Forster,** Armstrong Cork Co.; **E. C. Horner,** Enterprise Mfg. Co.; **Horace Pennington,** Cone Mills; **A. H. Moore,** Erwin Mills; **J. R. Meikle,** Rosemary Mfg. Co.; **Hon. C. R. Jonas (R., N.C.); J. P. Hughes,** Cone Mills; **H. C. Estes,** Pacific Mills; **A. R. Marley,** Erwin Mills; **J. L. Delany,** Joanna Cotton Mills; **W. M. Pittendreigh,** Riegel Textile Corp.

"THE BASIC AIM of Big Labor may be described in one word, 'more'," Armstrong Cork's Hugh Forster told the mill operating executives.

Industry

with much less effort.

The session was concluded with a discussion by Frank Leslie, Leslie and Co., of Worth Street and the grey goods market.

Need to Sell High School Grads on Industry. "A drastic shortage of textile school graduates faces the industry," retiring S.T.A. president D. A. Purcell told the Saturday morning session. Last year there were approximately 700 graduates of the 10 principal textile schools, and this year there will be only about 500—far less than the demand.

With the problems of modern management calling for more and more trained men, the prospective college student must be made aware of the opportunities which the textile industry offers. Much is now being done to encourage high school graduates to enter the textile schools, through textile foundations, scholarships, and special assistance. However, much more needs to be done. Other avenues of approach could be better utilized, including "open house" by mills and textile schools for high school students and their families, and articles in the textile press emphasizing the advantages which the industry offers to the potential textile student.

Concluding his remarks, Mr. Purcell said that, since mill executives should be most interested in this problem, it is their responsibility to contact the high school graduate and sell him on the idea of going to college and studying textiles.

Following Mr. Purcell's paper, Hugh Forster, assistant to the president, Armstrong Cork Co., discussed "Practical Employee Relations," and Congressman Charles R. Jonas (R., N. C.) reported on the Washington scene.

Elections. New members of the S. T. A. Board of Governors are: Horace Pennington, Cone Mills Corp., Greensboro, N. C.; A. M. Moore, Erwin Mills, Durham, N. C. (re-elected); R. S. Leach, Consolidated Textile Corp., Lynchburg, Va.; and D. A. Roberts, Lydia Cotton Mills, Clinton, S. C.

John Foard, Ragan Ring Co., Newton, N. C., was elected chairman of the Associate Members' Division; while J. E. Spivey, Textile Shops, Spartanburg, S. C., and Junius Smith, Clark Publishing Co., Charlotte, N. C., were chosen as vice-chairman and secretary-treasurer, respectively.

Canadian Trade Policies Protested

The principal beneficiary of Canadian tariff and trade policies originally designed to help Great Britain and Europe appears to be the United States of America, according to E. F. King, president of The Silk and Rayon Institute— a trade organization representing major Canadian producers of fiber, yarn, and fabrics made from silk, rayon, nylon, etc.

In his presidential address at the 25th annual meeting of the Institute at the King Edward Hotel in Toronto, Mr. King, who is also president of Domil Ltd., Montreal and Sherbrooke, Que., said Canada "has gone too far" with the progressive lowering of tariffs and relaxing of customs regulations that "have been a feature of our Government's international trade policies during the past decade or so."

Canadian manufacturers and workers adversely affected by these policies had been told, Mr. King said, that the objective was to help countries like Great Britain "and our other European and Asiatic friends" earn dollars.

"It seems to us however," he said, "that, at least as far as textiles are concerned, the principal beneficiary of the policy so far has been the United States of America.

"Now our relations with the United States are good, and if they were in trouble we would be glad to help them out. But they do not need and have not asked for aid of this nature from us, and I do not think—particularly in view of their own attitude towards tariff and customs concessions to Canada — that they expect any such aid or that we have any obligation to offer it."

Between 1950 and 1952, he said, imports of U. S. rayon, nylon and similar fabrics into Canada increased by 19,000,000 yards while Canadian production fell off by 20,000,000. This he described as "a disquieting pattern of a fall in Canadian production that is almost exactly matched in volume by increased imports from the United States."

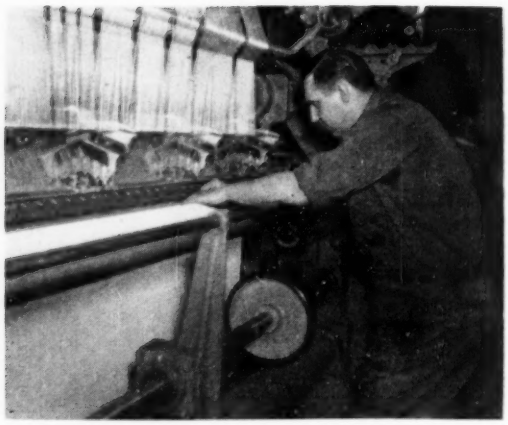
"It is impossible to avoid the conclusion," he went on, "that if U. S. manufacturers persist over a long period of time in overproducing and then turning to Canada as a convenient market for surplus and distress merchandise—as they seem to have done on a large scale in 1951 and 1952—or if they make a major effort to hold on to and increase the market that has gained in Canada at the expense of Canadian producers during the same period, the Canadian industry is in for a rough time in the immediate future."

A resolution protesting "trade policies which allow excessive imports from foreign countries to compete unfairly with our products" was passed by the Institute, and its members urged "the Government to deal promptly and effectively with the situation."

Quiet please!

Warp Knitters Producing

Objectionable vibration of warp knitters stopped by mounting the machines on isolator type vibration eliminators.



WARP KNITTERS are inspected by Robert Riehl, vice-president, Knit Craft, Inc. The 36-gauge 4-bar machine, shown here, is mounted on six rubber-in-shear unit isolators.

Staff Prepared

EXCLUSIVE

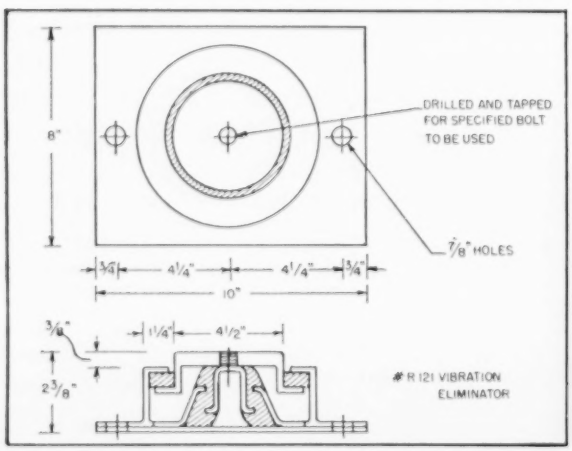
THE ROCKING MOTION of warp knitters does not produce noise of the kind which would lullaby a baby to sleep. As a matter of fact, neighbors dwelling near Knit Craft's West New York, N. J., plant were kept awake by it. Here, 30 five-ton warp knitters operating around the clock once created a community nuisance due to noise and vibration generated by high speed reciprocal movements of these machines.

Problem. Vibrations transmitted through floors and foundations finally set up sympathetic disturbances in adjacent buildings which were mostly residential. As is the case for most machinery located on concrete floors, the vibrations were accompanied by a noise level measured in a highly objectionable range of decibel.

Solution. 100 per cent of the trouble was eliminated when management mounted these machines on rubber-in-shear unit isolator type vibration eliminators. For warp knitters, Model No. 121 isolator, supplied by the Vibration Eliminator Company of Long Island City, N. Y., proved to be the answer. Vertical and horizontal efficiency of this particular isolator makes possible the isolation of machinery with a relatively high center of gravity where excessive sway and rocking are common.

Six of these units are mounted beneath each warp knitter. So equipped, the machines at Knit

VIBRATION ELIMINATORS are not bolted to the floor. Their effective isolation of machine tremor prohibits "dancing." Supporting housing is 4½ inches in diameter and is drilled and tapped for one foundation bolt as shown in these plan and elevation sketches. The steel collars and cork separator also act as an effective oil seal for the rubber insert.



Craft are now running silently. Around each pedestal it is virtually impossible to detect any tremor in the floor. Smoother operating conditions have reduced wear and tear on the knitters and have kept readjustment of delicate settings to a minimum.

Unit Load Range. The vibration eliminator is effective for a load range of up to two thousand pounds per unit. With deflections up to .18" it gives excellent isolation for operating frequencies down as low as 1000 cpm and under some conditions at considerably lower frequencies. The isolation medium is pure, live rubber-in-shear. Overlapping steel collars with a cork separator restrict both vertical and horizontal motion. The inside or supporting housing is 4½" in diameter and is drilled and tapped for one foundation bolt. The steel collars and cork separator also act as an effective oil seal for the rubber insert. The unit is not bolted to the floor; isolation prohibits the usual "dancing."

Ten Years of Cotton Textiles—1943 to 1953

	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
EQUIPMENT											
COTTON SYSTEM SPINDLES											
Spindles in place at beginning of year	23,757,844	23,342,922	23,105,942	23,787,000*	23,928,000*	23,727,000*	23,751,000*	23,341,000*	23,149,000*	23,152,000*	23,070,000*
Increase or decrease from preceding year	−399,402	−414,922	−236,980	681,058	141,000	−201,000	24,000	−410,000	−192,000	3,000	−82,000
New machines, additions and replacements	7,752	92,716	323,688	323,056	416,355	607,398	858,623	649,780	771,065	293,642	
OPERATION											
*CONSUMING COTTON ONLY											
Spindles active at any time during year ending July 31st	23,429,252	23,018,928	22,674,852	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Average number of active spindles based on twelve monthly reports	22,744,106	22,332,080	22,018,529	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Average number of spindles active on last working day of month	N.A.	N.A.	N.A.	21,475,000	21,588,000	21,391,000	20,061,000	20,440,000	20,632,000	19,924,000	
CONSUMING FIBERS OTHER THAN COTTON, OR BLENDS											
Average number of spindles active on last working day of month	N.A.	N.A.	N.A.	1,172,000	1,198,000	1,337,000	1,374,000	1,295,000	1,261,000	1,337,000	
ALL COTTON SYSTEM OPERATION											
Spindles idle during year ending July 31st	328,592	324,994	431,090	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
Average number of spindles idle on last working day of month	N.A.	N.A.	N.A.	1,212,000	1,066,000	1,050,000	2,334,000	1,372,000	1,264,000	1,807,000	
Spindle hours run:											
On 100% cotton	125,413,055,000	114,984,469,000	107,354,187,000	109,474,292,000	116,040,000,000	115,846,000,000	97,874,000,000	117,753,000,000	116,285,000,000	105,328,000,000	
On other fibers, blends	N.A.	N.A.	N.A.	5,875,000,000	6,346,000,000	7,432,000,000	5,816,000,000	7,502,000,000	7,563,000,000	7,513,000,000	
Hours run per average active spindle	5,514	5,149	4,876	5,094	5,371	5,424	4,882	5,760	5,748	5,499	
MARKET											
COTTON TEXTILES											
Production in square yards	11,569,224,000	10,572,421,000	9,779,238,000	10,171,225,000	11,083,363,000	10,863,129,000	9,391,578,000	11,206,659,000	11,415,218,000	10,589,410,000	
Exports in square yards	538,502,000	628,675,000	673,601,000	774,945,000	1,480,025,000	938,796,000	690,235,000	558,678,000	802,427,000	761,595,000	
Imports in square yards	19,695,000	11,216,000	80,029,000	43,758,000	15,962,000	31,749,000	19,743,000	47,799,000	45,779,000	34,881,000	
Available for domestic consumption	11,050,417,000	9,954,962,000	9,185,666,000	9,440,038,000	9,619,320,000	9,956,082,000	8,531,066,000	10,695,780,000	10,658,520,000	9,861,696,000	
Population at July 1st	136,729,000	138,397,000	139,928,000	141,389,000	144,126,000	146,631,000	149,188,000	151,677,000	154,360,000	156,981,000	
Available for per capita consumption in square yards	80.81	71.93	65.65	66.77	66.74	[illegible]	57.18	70.52	69.05	62.83	

*Includes cotton system spindles on other fibers. N.A.—Not available.

The accompanying chart, data for which was assembled by the Association of Cotton Textile Merchants of New York, reveals but partially the changing phases of recession, adjustment, and recovery experienced in the textile markets in 1952, W. Ray Bell, president, stated in the Association's 22nd annual "Ten Years of Cotton Textiles Survey."

World-wide depression in the textile industries which reached its low point in the summer of 1952 has given way in the ensuing months to an orderly recovery and a highly stable market with prospects unusually favorable at this time for the domestic industry, he said.

Mr. Bell noted a steady public consumption, well maintained trade inventories, and an upswing in first quarter production common to cotton, rayon and acetate, nylon, and other synthetic and silk broad woven goods. Second quarter prospects were also satisfying, and he emphasized a current mill position as to unsold stocks and unfilled orders "which is one of the most comfortable in history for this time of year."

Although the average number of working spindles was slightly below 20,000,000 in 1952 and the lowest for the postwar years, the number of idle spindles averaged 447,000 less than in 1949 when the first postwar adjustment was in progress. With an average running time of 5,499 hours for the year, the active spindles in cotton system mills accumulated a total of 116,911,000,000 hours of work, making a decline of only 7.1 per cent from the 1951 summary.

Continuing, Mr. Bell noted that since the spindle activity on other fibers and blends in these mills was slightly higher in 1952 than in 1951, the decrease in operations wholly on cotton fibers was 8,957 million active spindle hours. Translated into woven cloth production, the decline was 825,818,000 sq yd or 7.23 per cent.

10,589,410,000 sq yd of cotton textiles were produced in 1952, contrasted with 11,415,218,000 in 1951, and after import-export adjustment an availability per capita for the American people of 62.83 sq yd for the year. This, it was noted, is substantially less than the 65.86-yard 1946-52 average and suggested deficiencies measured by popular need still to be made up in 1953.

The survey showed a shift on the part of the military from stockpiling to replacement, but indicated probable military buying for 1953 of about the same amounts as in 1952.

Machine Interference—*do you measure*

PRODUCTION must necessarily suffer in textile mill processes such as drawing and weaving where one operative runs several machines that require servicing at random. He can only tend one machine at a time, so if two or more stop for service at the same time all except one must wait for the operator. The running time lost by a machine awaiting service by its operator who is attending another machine in the assignment is referred to as machine interference.

It has been estimated that almost one-half of the loom down-time yardage loss in weave rooms is caused by machine interference. To eliminate this machine interference would require the utilization of far too many operatives. On the other hand, over-assigning the operatives or giving them too many machines to tend results in high interference loss. In between these two extremes is the proper amount of interference—that which is most practical and economical for the particular department or mill involved.

The findings of a survey of industry unit work standards and job assignment practices, conducted by TEXTILE INDUSTRIES and reported in the January, 1952, issue, indicated that a machine interference allowance was used by 62% of the mills reporting; whereas 38% did not take this factor into consideration.

Answers to the question "How is machine interference allowance determined?" seemed to indicate that studies are generally made for the purpose on the job in question. It was obvious, however, from the variety of methods employed that a better way would be desirable.

Judging from the comments of the cotton mill superintendent, worsted weaving mill chief industrial engineer, a consulting industrial engineer, and other textile engineers who have studied this article, use of the accompanying tables should enable mill men to arrive at the most economical work loads to assign to operators and, in turn, to make the proper incentive allowance for interference idleness.

Comments on this article are invited. *Please address your communications to the editors, rather than to the author.—The Editors.*

CHANCES are that you do make some attempt to measure machine interference for purposes of setting work loads and piece rates. On the other hand, like many others you might have given up the chore of trying to directly time machine interference and either guess at the amount of interference down-time or just ignore it.

Time study men aren't to blame for the lack of interference estimation tools. If there are any doubts about this, just take the stop watch and board in hand and try to measure interference idleness in a weave room. The unpredictable, variable shut-downs of the looms make the timing of interference almost a hopeless task.

Even when some reasonable estimate of interference is finally worked out for a given assignment, the figures are of but limited value. Future changes in operator work loads make the direct timings of interference practically useless.

Realizing the need for a method

Dice Rolling and Interference

The principles of the interference tables presented in this article can be demonstrated by a simple dice rolling experiment. The illustrations below represent such an experiment.

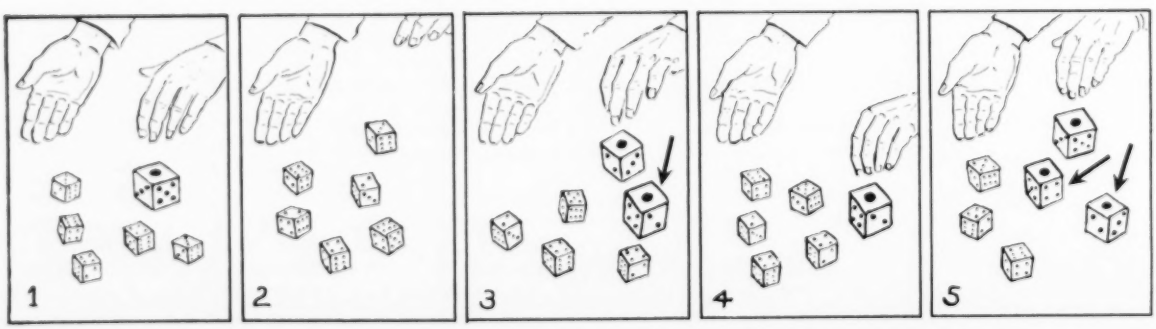
Let each of six dice represent a loom. Assume each loom would be down one-sixth of the time for servicing if individually tended. Now, since the ace (or one spot) on a dice will turn up an average of once per six rolls, let the ace represent the need of servicing and let the non-aces represent loom running time. Assume one operator is tending the six looms and let each roll of the dice represent an interval of time.

Starting at the left, during the first roll one die turned up an ace, meaning that the weaver was servicing the loom represented by that die during the first interval of time (note the left hand).

The six dice were rolled in the second time interval and no aces turned up, so the weaver was unavoidably idle.

During the third time interval the six dice were rolled and two aces turned up. The weaver serviced one of these looms but the second down loom had to wait due to machine interference.

The die which encountered the interference (denoted by arrow) "sat-out" the fourth roll since the operator serviced the loom represented by it during that roll. During this fourth time interval none of the remaining five dice which were rolled turned up an ace.



it when setting work loads and piece rates?

Here are handy tables for rapid estimation of

- ***Average percentage Machine Interference***
- ***Average percentage Machine Efficiency***
- ***Average percentage Operator Idle Time***

By DALE JONES
Associate Professor
School of Industrial Engineering
Georgia Institute of Technology

EXCLUSIVE

of estimating machine interference when figuring work loads and piece rates, the Georgia Institute of Technology School of Industrial Engineering has done considerable research on the problem. The accompanying interference tables are the results of this research.

Tables Mill Tested. These tables have been carefully tested with the "interference computer," an instrument developed at Georgia Tech and described on page 129. Also, several time study departments have put the tables to test on weaving, drawing, cone winding, and pin drafting assignments. Test results from the interference computer and from the engineers have been very satisfactory. Today the tables are being used in several mills in the United States, Canada, and Europe.

Interference and Work Loads. Consider the case of a weave room with 120 Draper Model E looms running a cotton fabric 60" wide, 40 ends and 26 picks per inch. Six weavers each tend 20 looms. The looms are running at 140 picks per minute, and the fabric requires an average of one minute down-time servicing by the weaver per 19 minutes of run time (5% work load per loom). Now refer to **Table I** and match 20x5% or **100%** with **20** machines; **7.5%** average interference per loom is indicated. In other words, approximately 615 yards of cloth could have been produced during the 7.5% interference idleness each shift the 120 looms are tended by six weavers.

Now, in order to reduce interference yardage loss assume a seventh weaver is added and assigned 18 looms, leaving 17 looms each for the original six weavers. The interference for the seventh weaver would be approximately **5.4%** (obtained by matching 18x5% or **90%** with **18** machines in **Table I**), and the average interference for the other six weavers would be approximately **4.6%** obtained by matching 17x5% or **85%** with **17** machines in **Table I**). For these conditions there would be a loss of approximately 385 yards of cloth production capacity

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During the fifth time interval the six dice were rolled, and three dice chanced to turn up aces. One of the three down looms represented by the three dice showing aces was serviced by the operator during the fifth interval, but the other two (see arrows) were idle due to interference.

Therefore, only the remaining four dice were rolled during the sixth time interval, none turning up ace. The operator serviced one of the two down looms while the other down loom was again idle due to interference.

During the seventh time interval, as the weaver serviced the one remaining down loom, one of the five dice which were rolled turned up an ace, meaning that the loom represented by that dice (see arrow) was idle due to interference.

During the eighth time interval, as the operator serviced the down loom the remaining five dice were rolled and no aces turned up. During the ninth time interval the six dice were rolled and no aces turned up, meaning the weaver was unavoidably idle.

It can be seen that by continuing to roll the dice a great number of times and then dividing the total number of interference waits by six times the number of rolls, the average ratio of machine interference time per loom to overall time for the simulated conditions can be determined. This value will be very close to 13.7%, the value shown for 6 machines and 100% work load (6 x 1/6) shown in Table I. The mathematics of the interference tables presented in this article is only an extension of this simple dice rolling experiment.

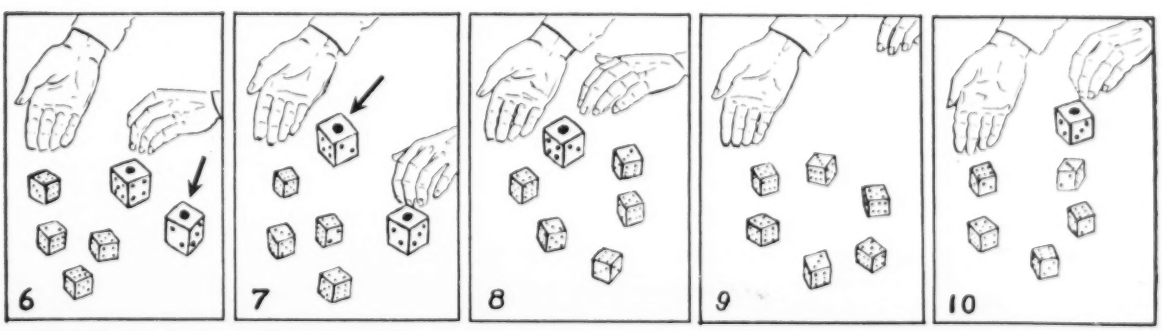


Table I. Average Percentage INTERFERENCE Per Machine Versus Total Percentage Work Load of Assigned Machines

No. Machs.	Operator's Total Percentage Work Load* on Individual Attention Basis														
	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
4	3.2	4.0	4.8	5.8	6.9	8.0	9.4	10.9	12.5	14.1	15.9	17.9	19.8	21.7	23.7
5	2.8	3.5	4.2	5.1	6.1	7.2	8.5	9.9	11.4	13.0	14.8	16.7	18.6	20.5	22.6
6	2.5	3.1	3.7	4.5	5.5	6.5	7.8	9.0	10.5	12.1	13.7	15.7	17.7	19.6	21.7
7	2.2	2.7	3.3	4.1	5.0	6.0	7.1	8.3	9.7	11.3	13.0	14.8	16.8	18.8	20.9
8	1.9	2.4	3.0	3.7	4.5	5.5	6.5	7.7	9.0	10.6	12.2	14.0	16.0	18.2	20.2
9	1.7	2.2	2.8	3.4	4.2	5.1	6.0	7.2	8.4	9.9	11.5	13.4	15.4	17.6	19.7
10	1.5	2.0	2.6	3.2	3.9	4.7	5.6	6.7	7.9	9.4	10.9	12.9	14.9	17.1	19.4
11	1.4	1.9	2.4	3.0	3.7	4.4	5.3	6.3	7.5	8.9	10.5	12.4	14.4	16.7	19.0
12	1.3	1.8	2.2	2.8	3.5	4.1	5.0	5.9	7.1	8.5	10.1	12.0	14.0	16.3	18.6
13	1.3	1.7	2.1	2.6	3.2	3.9	4.7	5.6	6.8	8.1	9.7	11.6	13.6	16.0	18.3
14	1.2	1.6	2.0	2.4	3.0	3.7	4.4	5.3	6.4	7.7	9.3	11.2	13.3	15.7	18.0
15	1.2	1.5	1.9	2.2	2.8	3.5	4.2	5.1	6.1	7.4	8.9	10.8	13.0	15.4	17.8
16	1.1	1.4	1.8	2.1	2.7	3.3	4.0	4.8	5.9	7.0	8.5	10.5	12.7	15.0	17.6
17	1.1	1.3	1.7	2.0	2.5	3.1	3.8	4.6	5.6	6.7	8.2	10.2	12.4	14.8	17.4
18	1.0	1.2	1.6	1.9	2.4	3.0	3.6	4.4	5.4	6.5	7.9	9.9	12.2	14.7	17.3
19	1.0	1.1	1.5	1.9	2.3	2.9	3.5	4.2	5.2	6.2	7.7	9.6	12.0	14.6	17.2
20	.9	1.1	1.4	1.8	2.2	2.8	3.4	4.1	5.0	6.0	7.5	9.3	11.8	14.5	17.1
25	.8	.9	1.2	1.5	1.8	2.3	2.8	3.4	4.2	5.2	6.6	8.4	10.8	13.7	16.9
30	.7	.8	1.0	1.2	1.6	2.0	2.4	2.9	3.7	4.6	5.9	7.7	10.2	13.3	16.8
40	.5	.6	.8	1.0	1.2	1.5	1.8	2.3	2.9	3.7	5.0	6.8	9.4	13.2	16.6
50	.3	.5	.6	.8	.9	1.2	1.5	2.0	2.5	3.2	4.2	6.1	9.3	13.2	16.6
75	.2	.3	.4	.5	.6	.8	1.0	1.3	1.7	2.2	3.3	5.2	9.1	13.1	16.5
100	.2	.2	.3	.4	.5	.7	.9	1.1	1.5	1.9	2.8	5.1	9.0	13.0	16.5

*Figure the work load at incentive pace and exclude deferable "internal" duties (those which can be performed when all machines are producing).

due to interference.

Which is best—having six weavers and losing production capacity of 615 yards of cloth per shift or having seven weavers and losing the production capacity for 385 yards of cloth per shift? Or, to put it another way, will it pay to hire an additional weaver in order to increase production by 230 yards (615-385=230) of cloth per shift? The answer to this question depends, of course, on several things; i.e., labor costs, profit, etc.

If the percentage of profit is high, interference should be reduced; but when profit is low, work loads (and interference) should be high. More and more textile mill managers are realizing this and getting away from the idea that a certain efficiency (and a certain amount of interference) is best regardless of profit.

Now, assume you are considering assigning to one operator 20 looms producing a cloth which requires an average of 3.3 minutes down-time servicing time per loom per 10,000 picks produced (mainly making minor loom adjustments while the loom is producing). The average loom running time per 10,000 picks is 81.0 minutes. This time information is illustrated in Fig. 1.

In the illustration, notice that the operator work load per loom is (3.3 x 0.5) + (3.3 x 81.0) or 4.5%, giving a total operator work load of 90% for the 20 looms. Now, matching **90** with **20** machines in **Table I**, **5%** average interference per loom is obtained. In other words, the average loom will be shut-down, waiting to be serviced by the weaver, an average of 5 minutes per 100 minutes the weaver is on the job.

Notice also in the illustration that the weaver would have only 20 x (3.3 x 0.5) or 76.0 minutes of work per (84.3 + 4.4) or 88.7 minutes when tending the 20 looms. He will, therefore, be unavoidably idle 12.7 minutes per

FIG. 1. Illustration of the effects of machine interference.

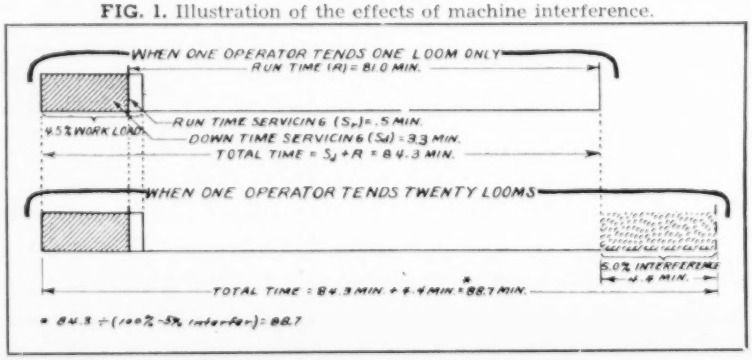

WHEN ONE OPERATOR TENDS ONE LOOM ONLY
RUN TIME (R) = 81.0 MIN.
4.5% WORK LOAD
RUN TIME SERVICING (S_r) = .5 MIN.
DOWN TIME SERVICING (S_d) = 3.3 MIN.
TOTAL TIME = $S_d + R$ = 84.3 MIN.
WHEN ONE OPERATOR TENDS TWENTY LOOMS
5.0% INTERFERENCE
4.4 MIN.
TOTAL TIME = 84.3 MIN. + 4.4 MIN. = 88.7 MIN.
* 84.3 ÷ (100% - 5% interfer) = 88.7

Table II. Average Percentage EFFICIENCY Per Machine Versus Total Percentage Work Load of Assigned Machines

No. Machs.	Operator's Total Percentage Work Load* on Individual Attention Basis														
	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
4	84.7	82.8	80.9	78.9	76.8	74.7	72.5	70.2	67.8	65.5	63.1	60.5	58.2	55.8	53.4
5	87.5	85.9	84.3	82.6	80.7	78.9	76.7	74.8	72.6	70.5	68.2	65.8	63.5	61.2	58.8
6	89.4	88.0	86.7	85.2	83.5	81.8	79.9	78.1	76.1	74.0	71.7	69.5	67.2	65.0	62.6
7	90.8	89.6	88.4	87.0	85.5	83.9	82.3	80.6	78.7	76.7	74.6	72.4	70.1	67.9	65.5
8	92.0	90.9	89.7	88.5	87.1	85.6	84.1	82.5	80.8	78.8	76.8	74.7	72.5	70.1	67.8
9	92.8	91.8	90.7	89.6	88.4	87.0	85.6	84.0	82.4	80.6	78.7	76.5	74.3	72.0	69.6
10	93.6	92.6	91.6	90.5	89.4	88.2	86.9	85.4	83.8	82.0	80.2	77.9	75.7	73.4	70.9
11	94.1	93.2	92.3	91.3	90.2	89.1	87.8	86.4	84.9	83.2	81.4	79.4	77.0	74.6	72.2
12	94.6	93.7	92.9	92.0	90.9	89.9	88.7	87.4	85.9	84.3	82.4	80.3	78.1	75.7	73.2
13	94.9	94.1	93.4	92.5	91.5	90.6	89.4	88.2	86.8	85.2	83.4	81.3	79.1	76.6	74.2
14	95.3	94.5	93.8	93.1	92.1	91.1	90.1	89.0	87.6	86.0	84.2	82.1	79.9	77.4	75.0
15	95.5	94.9	94.2	93.5	92.6	91.7	90.7	89.5	88.3	86.7	85.0	82.9	80.6	78.1	75.6
16	95.8	95.2	94.5	93.9	93.0	92.2	91.2	90.1	88.8	87.5	85.8	83.6	81.3	78.9	76.2
17	96.0	95.5	94.8	94.3	93.5	92.6	91.7	90.6	89.4	88.1	86.4	84.3	81.9	79.4	76.8
18	96.2	95.8	95.1	94.5	93.8	93.0	92.1	91.1	89.9	88.6	87.0	84.8	82.4	79.8	77.2
19	96.4	96.0	95.4	94.7	94.1	93.3	92.4	91.5	90.3	89.1	87.4	85.4	82.9	79.2	77.6
20	96.6	96.2	95.6	95.0	94.4	93.6	92.7	91.8	90.7	89.5	87.9	85.9	83.3	80.6	77.9
25	97.2	96.9	96.4	95.9	95.4	94.8	94.1	92.3	92.3	91.2	89.7	87.7	85.3	82.3	79.1
30	97.6	97.4	97.0	96.7	96.1	95.6	95.0	94.3	93.4	92.4	91.0	89.1	86.5	83.4	79.9
40	98.3	98.0	97.7	97.4	97.1	96.7	96.2	95.6	94.9	94.0	92.6	90.7	88.1	84.3	80.9
50	98.7	98.4	98.2	97.9	97.7	97.3	96.9	96.3	95.7	95.0	93.9	91.9	88.7	84.8	81.4
75	99.1	99.0	98.8	98.6	98.5	98.2	97.9	97.6	97.1	96.6	95.4	93.5	89.6	85.6	82.2
100	99.3	99.2	99.1	99.0	98.7	98.5	98.3	98.1	97.6	97.2	96.2	93.9	90.0	86.0	82.5

*Figure the work load at incentive pace and exclude deferable "internal" duties (those which can be performed when all machines are producing).

Table III. Average Percentage OPERATOR IDLE TIME Versus Total Percentage Work Load of Assigned Machines

No. Machs.	Operator's Total Percentage Work Load* on Individual Attention Basis														
	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
4	52	47	43	39	35	31	28	24	21	18	16	14	12	10	8
5	52	47	43	39	34	31	26	23	20	17	15	13	11	8	7
6	51	47	42	38	34	30	26	23	20	17	14	11	10	7	6
7	51	46	42	38	34	30	26	22	19	16	13	10	8	7	5
8	51	46	42	38	33	29	25	22	18	15	12	10	8	6	4
9	51	46	42	37	33	29	25	21	17	15	12	9	7	6	4
10	51	46	42	37	33	29	25	21	17	14	11	8	6	5	3
11	51	45	42	37	33	28	24	20	16	14	11	8	6	4	3
12	51	45	42	37	33	28	24	20	16	13	10	7	5	4	2
13	51	45	42	37	32	28	24	20	16	13	10	7	5	4	2
14	51	45	41	37	32	28	23	20	16	12	9	6	5	3	2
15	51	45	41	36	32	27	23	19	16	12	9	6	4	3	1
16	50	45	41	36	31	27	23	19	15	12	9	6	4	2	1
17	50	45	41	36	31	27	23	19	15	12	8	6	3	2	1
18	50	45	41	36	31	27	22	19	15	11	8	5	3	1	
19	50	45	41	36	31	27	22	18	14	11	7	5	3	1	
20	50	45	40	36	31	27	22	18	14	10	7	4	2	1	
25	50	45	40	36	30	27	22	18	13	10	7	3	2		
30	50	45	40	36	30	27	22	17	13	10	7	2	1		
40	50	45	40	36	30	27	21	17	12	9	6	1	1		
50	50	45	40	35	30	26	21	16	12	9	5	1			
75	50	45	40	35	30	25	20	16	11	8	4				
100	50	45	40	35	30	25	20	16	11	7	3				

*Figure the work load at incentive pace and exclude deferable "internal" duties (those which can be performed when all machines are producing).

A.	Loom run time	81.0
B.	Stopped time work	3.3
C.	Run time work	.5
D.	Total Work (B/C)	3.8
E.	Loom cycle time on individual attention basis (A/B)	84.3
F.	Per cent servicing time (D÷E) x 100	4.5%
G.	Number of looms in the assignment	20
H.	Average per cent interference per loom (Match 20 x 4.5% or 90% with 20 machines in Table I)	5.0%
I.	Net loom cycle time when all 20 looms are tended together $\left[E \div \frac{100-H}{100}\right]$	88.7
J.	Gross day minutes	480.0
K.	Standard personal and interruption min./day*	50.0
L.	Net day minutes	430.0
M.	Quota picks/day/loom [(L ÷ I) x 10,000]	48,500

*Based on production studies in this particular mill.

FIG. 2. How Table I may be used to set incentive rate, in terms of quota picks per loom per day, for weaving assignment where looms are producing the same type of fabric (servicing requirements for each loom are *similar*). Values shown for items A, B, C, D, E, and I are expressed in terms of expected minutes per 10,000 picks.

88.7 minutes or 14% of the time he is on the job.

In practice it is not necessary to make these calculations to estimate the operator's idle time. Notice that by matching **90** with **20** machines in **Table III** the **14%** operator idleness is obtained directly.

Interference and Incentives. Now let's consider the use of Table I in setting incentive standards. Since machine interference idleness depends on the number of machines tended by the operator, it must be kept in mind that a given product should have different incentive rates for different numbers of machines in the assignments in which it is produced. In the case of the aforementioned assignment involving 20 looms producing a given type of cloth, the incentive rate, in terms of quota picks per loom per day, would be determined as shown in Fig. 2.

In assignments where two or more products or machines requiring different servicing percentages are tended, the *average* percentage interference per machine is found in the same manner as that just described. That is, the individual work loads are totaled and the total work load of the assignment is matched with the number of machines in the assignment in Table I to estimate the average interference per machine.

A more exact method of estimating the interference per machine producing a given product when two or more products or machines requiring different servicing percentages are tended together in the assignment is as follows:

(1) For any given product, multiply the total number of machines in the assignment by the percentage servicing required of the product under consideration.

(2) Using Table I, match the value obtained in (1) with the total number of machines in the assignment.

This method of estimating interference where machines have different degrees of servicing requirement can be illustrated by an example dealing with drawing assignments involving random creeling. Consider an assignment of six breaker drawing frames and six finisher drawing frames tended by one operator, each frame having four deliveries. A suggested method of setting the incentive standard in terms of cans doffed per 40-hour week from the finisher drawing frame is shown in Fig. 3.

Referring to **Table II**, the average percentage efficiency which should be secured from the finisher drawing frames for the conditions just described can be determined by matching **90** (12 frames x 7.5% work load per finisher frame) with **12** machines. For these conditions, the average ef-

FIG. 3. Method for use of Table I in setting incentive standard for job assignment involving machines having *different* servicing requirements.

A.	Process	Breaker Drawing	Finisher Drawing
B.	Stock	Middling 1"	Middling 1"
C.	Grains per yard	62	65
D.	Deliveries per frame	4	4
E.	Number of frames	6	6
F.	Pounds per can (14" cans)	17.75	19.50
G.	Rpm of calender roll	265	265
H.	Diameter of calender roll	2"	2"
I*.	Pounds per hour per delivery @ 100%	24.58	25.77
J*.	Run minutes to fill can	43.33	45.40
K.	Stop minutes per frame per doff for piecing up the sliver in the front and creeling in the back	2.65	2.87
L.	Stop minutes per frame for doffing	.80	.80
M*.	Per cent work load per frame	7.4%	7.5%
N*.	Average per cent interference per frame	6.8%	7.1%
O*.	Total time per frame	52.8	
P.	Available minutes per 40-hr week (deduct 98 minutes per 40-hr week for cleaning, oiling, and repair)	2302	
Q*.	Standard finisher frame can doffs per 40-hr week	174	

*How these figures were derived is explained below:
I = (G x H x 3.1416 x 60 min. per hr x C) ÷ (36" per yard x 7000 grains per pound)
J = (F x 60 minutes per hr) ÷ I
M = 100 x (K/L) ÷ (J/K/L)
N (for Breaker) = 12 machines × 7.4% or 88.8% work load (see Table I) = 6.8%
N (for Finisher) = 12 machines x 7.5% or 90.0% work load (see Table I) = 7.1%
$O = (J/K/L) \div \frac{(100 - N)}{100}$
Q = (D x P) ÷ (O)

ficiency per frame should be **85.9%** during the time the operator is at the work place.

Limitations of Tables. In each of the three tables, it is assumed that the machines require servicing in a random manner. The tables should not be used for other conditions. Also, it is assumed that one operator tends the machines unassisted. The tables do not apply to assignments where two or more operators perform the same duties.

In cases where the operators contribute to inefficiency of the assignment but do not perform the same duties, estimate the average down time per unit due to these other operators and add the value to machine run time per unit before figuring the "Operator's Total Percentage Work Load" for the operator under consideration.

Table II assumes that all of the operator's work is done while the machine serviced is non-productive. If some of his work is done while the machine serviced is running, estimate the percentage of this servicing and add to the table value to get the proper estimate of average machine efficiency. Also, since Table II assumes that only one operator works in the assignment, it is necessary to subtract from the table value, in cases where other operators work in the assignment, the estimated percentage down time due to other operators.

Table III assumes that none of the operator's work can be deferred until a time when all machines are producing. In those cases where deferrable servicing (necessary servicing which in order to minimize interference can be delayed until times when all machines are producing) is performed, subtract the estimated percentage of time spent on the deferrable duties from the table value.

Tables II and III are useful for estimating operator and machine idleness in assignment possibilities for the purpose of determining the most economical assignments.

Development of Interference Tables

In assignments where machine shut-down is unpredictable, it has been found that machine interference can be measured with the aid of certain laws of probability. The method by which these laws were used in preparing the accompanying tables is as follows:

Let S_a = the expected "external" servicing time (operator walk, work, and any necessary relax time which must be taken at the expense of lost production) per unit of product; i.e., that servicing which must be done while the machine served is non-productive.

Let S_r = the expected "internal" servicing time (operator walk, work, and necessary relax time) per unit of product; i.e., that servicing which can be done while the machine serviced is productive. Those internal duties which normally may be economically interrupted and/or deferred for the purpose of avoiding interference are not to be considered in this category.

The walk time in S_a and S_r is based on average walking which would be necessary if the number of machines under consideration were tended together.

Let R = the average machine run time per unit of product.

Then S, the portion (decimally expressed) of overall time any given machine would require servicing if individually tended from a point involving average walking necessary when the number of machines under consideration are tended together, is: (servicing time per unit)÷(total time per unit) or $(S_a/S_r)\div(S_a/R)$.

Let n = the number of machines which would be tended together in the assignment under consideration.

Now, when one operator tends n machines which shut down unpredictably, machine interference idleness will occur. Let i = the average portion of overall time each of the n machines under consideration (having an average of S servicing portion each) would be non-productive due to machine interference if tended together by one operator. The average portion of overall time each of the machines would require servicing *when tended together* is therefore $S\times(1-i)$.

Let d = the average portion of overall time a given machine in an assignment is idle due to servicing duties and interference: $d=S\times(1-i)/i$.

The probability that none of the n machines will require servicing at any given moment is $(1-d)^n$. Accordingly, the probability that one or more machines will require servicing at any given moment is $1-(1-d)^n$. These statements of probability are exactly true only in cases where the S for each machine in the group is the same. However, in those cases where the machines have different S values, the use of the average S for the group introduces but a small error, according to the interference computer experiments to be described.

The average ratio of servicing time to overall time when n machines are tended together, i.e., $S\times(1-i)$, can now be expressed as $[1-(1-d)^n]\div n$. This expression is the key to the interference curves which were used to prepare the accompanying tables. In preparing the curves, convenient d values were chosen for various n values to compute $S\times(1-i)$ values. These $S\times(1-i)$ values and their respective d values were then substituted in the formula: $d=S\times(1-i)/i$ to arrive at the respective i values, making the interference curves possible.

The Georgia Tech Interference Computer. This mathematical method for development of the interference curves is sufficiently complex as to raise questions of validity from those who are not versed in mathematics. For this reason, an interference computer was developed and operated in the Georgia Institute of Technology School of Industrial Engineering in order to test the validity of this recently conceived mathematical method of evaluating machine interference idleness under various conditions. The equipment so designed simulates actual shop conditions in the laboratory, duplicating the desired operating behavior of ten semi-automatic machines tended by one operator. One hour's operation of this computer yields results representative of approximately ten hours of operation of the machines which it simulates.

The ever-confusing problem of trying to record interference waiting time for each of several machines operated simultaneously is handled without error by the interference computer, by means of mechanical counters and an electrical timer. Regardless of the combinations of shut-downs and their respective durations, the interference computer provides results which are free of error.

This interference computer contains three principal components: (1) a group of ten "machines" placed in a circle, (2) an "operator" moving about the circle, servicing machines which shut down, and (3) a timing and revolution-counting apparatus. These may be seen in Fig. 4 and 5.

Each of the ten machine units consists of a transparent plastic disc placed on a round table and centered by a slip-fit over a shaft, the principle employed in the conventional phonograph table and record arrangement. Each table revolves at a slow constant speed (22.5 revolutions per hour) by means of a V-belt drive. Positioned tangent to each disc, and

equidistant from the center of the circle of the ten units, are "detectors" which pivot vertically to contact the upper surfaces of the discs at points near their circumferences. Rectangular "servicing" blocks of any desired length and number are fastened to the top surface of each disc, flush with the outer edge.

These block-bearing discs revolve with the table upon which they rest. This detector, when contacted by a servicing block, first rises slightly and then "catches" or stops the movement of the block, and consequently, the disc upon which the block is mounted. In the meantime, the round table which supports the disc continues to revolve at a slow constant rate. Cessation of movement of a disc represents the corresponding shut-down on the part of the "machine."

The required "servicing" of the individual machines is performed by an "operator," which revolves in the path of the detectors of the machines. This operator consists of a narrow arm extending from a platform, like the individual discs, and rests on a table which revolves at a constant rate (ten revolutions per minute), except when the operator has to stop and service a "machine."

As was mentioned previously, when a block passes beneath the detector, it causes the detector to rise, after which the block catches on the detector pawl, causing the disc to cease revolving. This is interference idleness, since the machine is waiting for the operator. The magnitude of this interference idleness for each machine over the test period is later determined by subtracting the number of actual revolutions from the number of revolutions theoretically possible had there been no interference. Having been elevated by the block, the detector is in the path of the operator.

The operator, upon approaching the idle machine, raises the detector pivot arm slightly in order to release the pawl from the block and to permit the disc to resume moving in conjunction with its table. After the detector arm is raised and disengaged from the block, it is momentarily released by the operator so that the detector pawl thereafter rests on top of the now-moving block. As this begins, the operator comes in contact with the end flange of the detector, and because of the elevated position of the detector, the operator must remain stationary, "servicing" the machine, until the block completes passing under the detector, after which the detector drops to its normal position in contact with the disc surface. In resuming its normal position, the detector breaks contact with the "operator" arm, permitting the operator to proceed to any of the other machines which might have chanced to shut down.

The equipment also includes a mechanism which causes variability and unpredictability in the movement of the ten block-bearing discs. Two interrupters which rise from beneath each disc are actuated by five constantly revolving cams of different lengths, moving at different speeds. The irregular interruption caused by

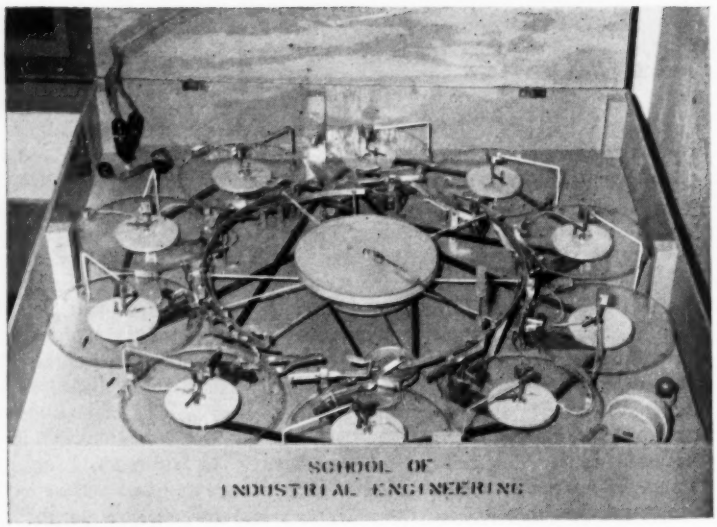
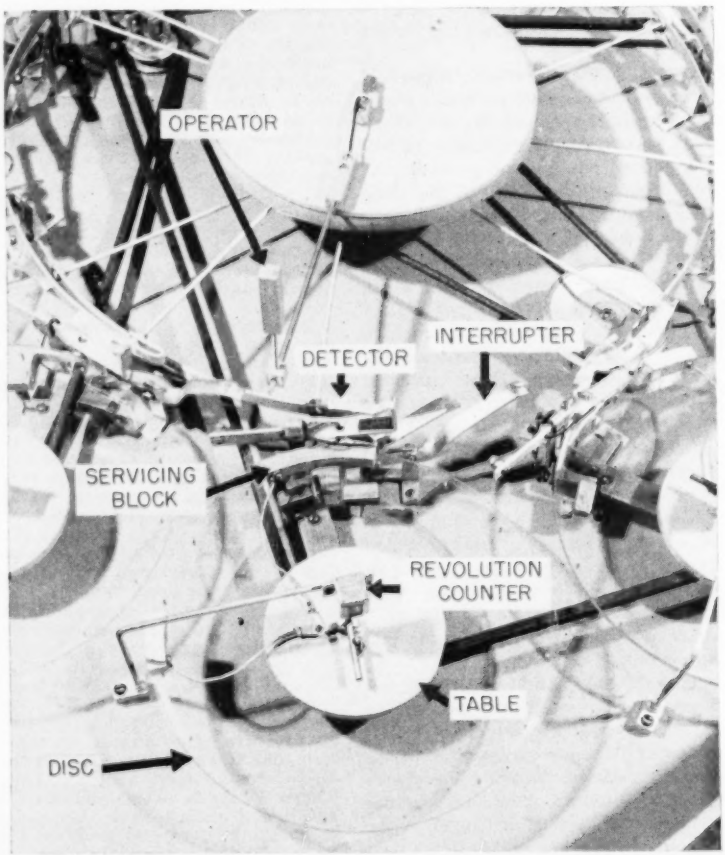


FIG. 4. The machine interference computer developed at the School of Industrial Engineering at Georgia Tech and utilized to test validity of interference tables presented here.

FIG. 5. Close-up showing components of the computer. Machine in foreground has shut down and is waiting to be serviced by the "operator," thereby creating interference waiting time. Action of operator will be to pass counter-clockwise beneath detector, raising it and then dropping it on top of servicing block, thereby permitting disc to resume movement (in a clockwise direction). In the raised position, however, detector will detain operator. Thus, "servicing" by operator will continue until servicing block completes its passage beneath detector, after which operator will move on to next machine that is idle and awaiting servicing.

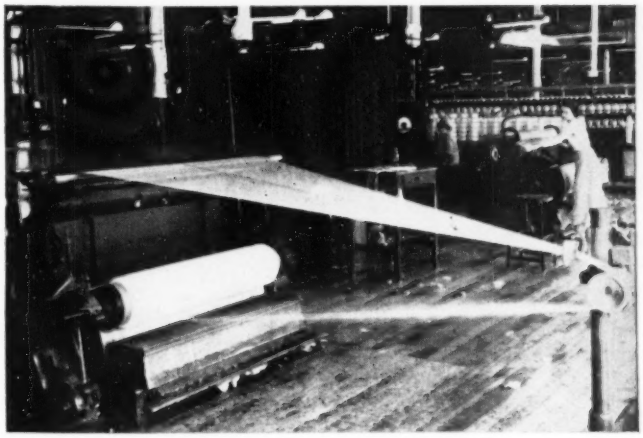


Dual Control Stop for Older Warpers

Warpers in one large southern mill are paired and wired so that one operator running two warpers can stop either warper from a position at the other. By raising the stop lever on one, the other warper comes to an immediate stop.

This arrangement is helpful in instances where an end breaks in front of the comb and stop motions. Sometimes the broken end is caught on the revolving beam and the warper continues to run, thereby winding the broken end improperly on the beam.

The wiring circuit permits the operator to stop one warper while she may be working on the other, should she observe an end broken in front of the comb and stop motions. The operator in the photo is shown in the act of stopping a ball warper while working on a beam warper.



AATCC Spent $47,545 for Research in 1952

Annual expenditures for research by the American Association of Textile Chemists and Colorists have increased from $6,888 in 1941 to $47,545 in 1952, according to the financial report presented at the Association's 187th council meeting last June. The greatest part of this money has been used for determining the best test methods for properties of textiles and setting up these tests as standards for use of the industry. It was reported to the Council that the new federal legislation on flammability of textiles recently passed by the house uses as its standard test the AATCC standard test method.

Other interesting facts presented at the meeting were:

(1) A comprehensive study of vat dyeing written by AATCC members, "The Application of Vat Dyes," is off the press and being distributed. Available to members and non-members at reasonable price.

(2) Another book on analytical methods for textile laboratories is now being edited.

(3) New members: 87 individuals and seven corporate.

(4) Beginning with the 1954 Year Book, all American-made dyestuffs formerly called "Acetate Dyestuffs" will be listed under the name of "Disperse Dyes."

(5) AATCC has been asked to study and revise the FTC proposed Fair Practice Rules on Water Repellency.

(6) British and German grey scales for visual evaluation of color fading are available from the Association. Mills are urged to try these since eventually the International Standards Organization plans to set them up as world standards of color fading measurement.

this arrangement introduces the variability and unpredictability present in most machine running cycles. Over the thirty-minute test period, however, each machine is interrupted for an equal length of time.

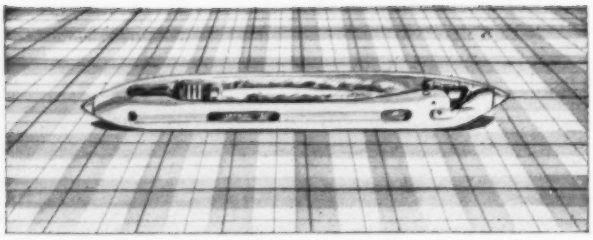
An electric timer records the total time the operator is working during the test period. This is accomplished by having the timer circuit completed by the contact of any one of the detectors with a servicing block. At the end of the experiment, the percentage of total time worked by the operator is computed and then divided by the number of machines tended in order to get the average percentage servicing time per machine. The average interference per machine is determined by dividing, for each machine, the lost revolutions due to interference by the 11.25 revolutions that would have resulted during the thirty-minute test, had there been no interference, and averaging the machines' interference ratios.

More than 100 thirty-minute tests have been conducted with the interference computer, giving results representative of approximately 500 hours of multiple machine assignment in the plant. The tests involved conditions of uniformity where the servicing requirements per machine were the same, as well as non-uniform conditions where the servicing requirements per machine varied considerably.

The test results were in very close agreement with the corresponding mathematically determined curve values for groups of four through ten machines, for both uniform and non-uniform servicing requirements. In no case did the actual interference resulting from a test differ from the corresponding curve value by more than 3%; the average difference was .86%.

The actual average interference per machine for all tests involving four through ten machines was 12.0% and the average interference per machine for the conditions tested, determined through the use of interference tables, was 12.4%.

There were significant differences between the actual interference values and the mathematically determined interference values for tests involving assignments of two and three machines. It is probable that the test periods were too short to give proper treatment to the limited probabilities of simultaneous shutdown in these assignments.



Part 4

The May, June, and July issues carried the first three articles of this series. Discussion of filling defects is concluded in this fourth article.

By GEORGE WILLIAMS

EXCLUSIVE

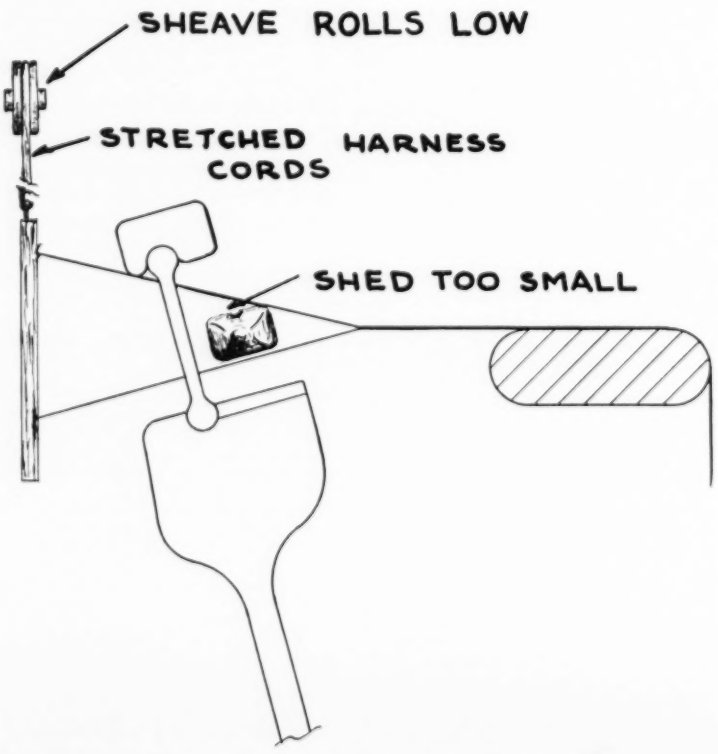
Weaving Filament Synthetics

(emphasis on fine denier)

Defects: Causes and Remedies

Low Harness (overshots). *This cloth defect is caused by the shuttle going over instead of under a number of ends in the top shed.*

1. Too little shed is one of the major causes of this cloth defect, and it is the result of sheave rolls being set too low or of stretched harness cords. A small shed may also be formed if the dobby knives do not have a long enough stroke or, on cam looms, if the straps on the treadles are set too far in.



2. Any fault in either the alignment of the loom or the balance of the shuttle can cause a "crooked shuttle" to be thrown. Then the shuttle can go over one or more ends in the top shed. Primary causes of "crooked shuttles" are:

Box too low—shuttle hits lay end and jumps.

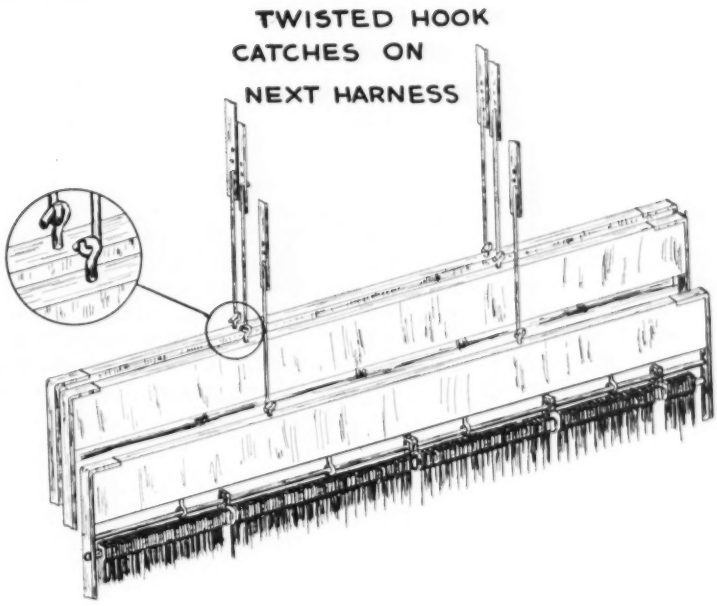
Picker binding on picker stick.

Picker not parallel with box and race plate.

Reed out of line with box plate.

Box binding in slide.

3. Bent harness hooks will cause low harness design faults. The hooks on the harness, if bent sideways, can hang on the adjacent harness and the two of them will move together, which will mean one harness is often in the wrong half of the shed.



4. If harnesses are timed too late or if the loom picks too early, the shuttle will run over several ends near the selvage since the shuttle will start its flight before the ends are raised to form the shed. If the majority of low harness defects are near the selvage, this is likely to be the cause.

Mis-Pick. *A distinct break in the pattern of the weave as the result of a pick missing.*

1. A mis-pick is actually a human error. In starting up a loom after a stop, the weaver fails to get the dobby pattern chain in proper position before starting the loom. Call any such cloth defects to the weavers' attention and train them in proper setting of chains. When mis-picks are frequent, there is no need to call the loom fixer—call the training director.

Shiners. *This is a defect resulting from over-stretched filling. It shines and produces a streak which contrasts with the cloth along side it.*

1. Shiners are found more frequently in natural or low twist yarn than in yarn with high twist. The stretching of the yarn beyond its ability to recover may be from too much tension in twisting or quilling.

2. There may be too much tension on the yarn in coming off the shuttle as the pick is made. Look for too tight a tension eye, loose fur, or too much fur for the type of yarn being used.

3. Long quills will cause shiners because the yarn has to be pulled across the quill end to unwind. On natural twist yarn it is wise to use a short quill in winding. This will be of help in avoiding shiners.

Puckery Cloth. *The cloth puckers as though it were trying to make an irregular fillingwise seersucker.*

1. Puckery cloth is the result of varying tension in the filling from pick to pick. It may be made by any of the causes of kinky filling—particularly those related to filling tension. It can be caused in either quilling or weaving. (See Kinky Filling, Part 3.)

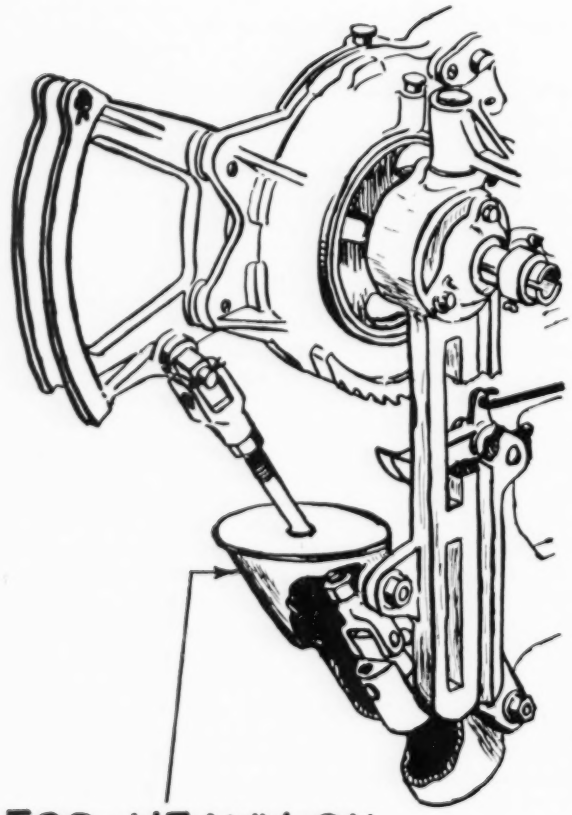
Slubby Filling. *The cloth has a slubby appearance which is the result of the yarn sloughing-off the quill and weaving into the cloth.*

1. Slubby filling is usually associated with very soft or over-conditioned yarn. It is caused by the same loom faults which cause kinky filling with high twist, hard yarns. (See Kinky Filling, Part 3.)

2. If the trouble seems to come from the quilling rather than from some loom misalignment, it can usually be cured by quilling with a longer stroke so that there is less tendency for the yarn to slough from the quill. The softer the yarn, the longer the stroke should be in quilling.

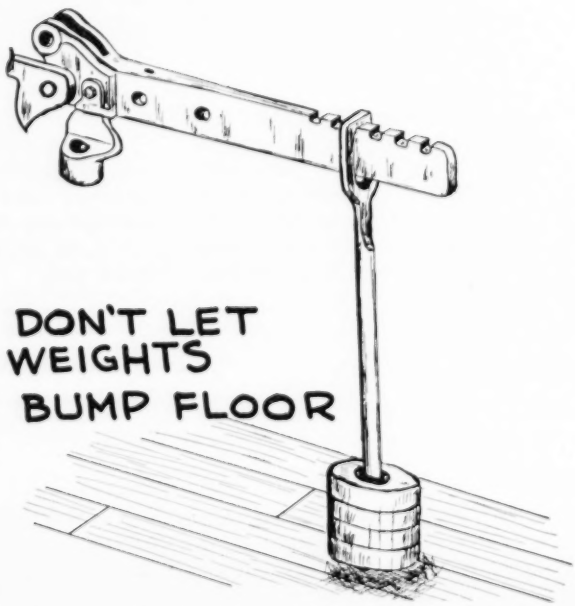
3. Check the fur in the shuttles. Worn fur will permit the yarn to slough-off the quills.

Waviness. *This is a series of light and heavy marks which alternate to give a shadowy waviness to the woven cloth. The causes of this defect are very similar to those which make heavy marks. (See Heavy Marks, Part 3.)*

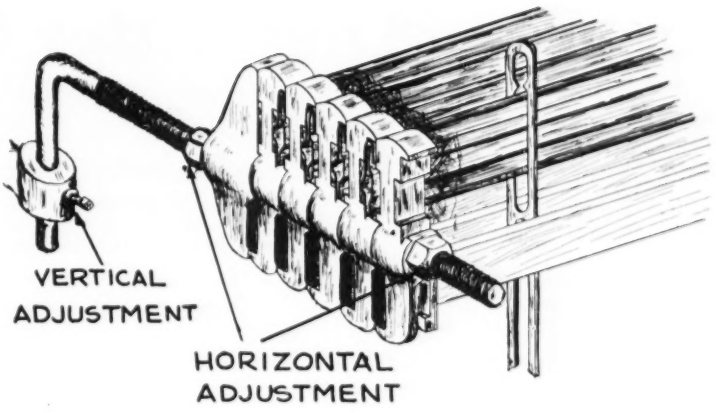


TOO HEAVY OIL IN DASHPOT CAUSES WAVINESS

1. The most frequent cause of waviness is trouble in either the let-off or the take-up motion which permits a variation in warp tension. Watch for oil on the brake linings of Bartlett let-offs or hard grease or waste on the ratchets or worm gears of precision let-offs. Too heavy an oil in the dash pots will also permit a variation in warp tension. With precision and full automatic let-offs be sure weights are not bumping on the floor.



2. The loom drive may be the cause of varying warp tension. Check for a slipping drive friction or a bad pinion gear on the motor which will let the loom reduce speed in beating-up.



3. If the drop wires on the warp ends are set too high, too low, or too close to the harnesses, they will put tension on the ends and cause wavy cloth.

4. Static can cause waviness, particularly in loose weaves such as satins. After the beat-up, the charged yarn will follow the reed and make wavy cloth. This can usually be overcome by adjusting the pitman arm springs so that the lay will not bounce when the filling is beaten into the fell of the cloth.

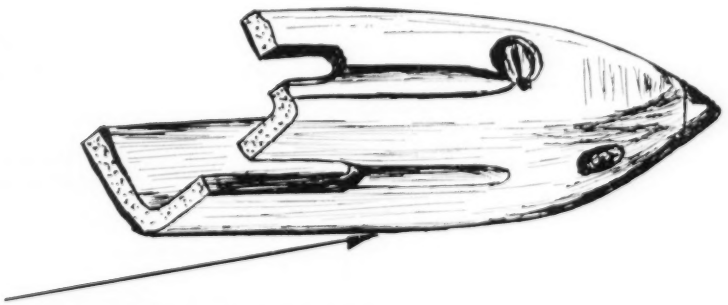
5. Check for binding whip rolls, cloth rolls, or pressure rolls, and look for bent warp beam journals and crooked crank shafts.

Shuttle Marks. *This defect shows up as a series of thin lines running in the direction of the filling. It is caused by bruised warp ends.*

1. Shuttle marks are always made by damaging the warp ends of the bottom shed. Top shed ends are not damaged by the shuttle in its flight. It has been demonstrated that the shuttle, in making its pick, always runs on its lower, back edge. It is this edge of the shuttle which does the damage. All shuttles should be slightly rounded on this edge, then sanded and shellacked. If this shuttle edge is kept smooth and rounded, the number of shuttle marks will be greatly decreased.

2. A soft lay cover will help avoid shuttle marks. A soft felt makes the best cover because it will not harden as quickly as corduroy. It should be replaced as soon as it shows signs of wear.

3. Too small a shed or a "crooked shuttle" (see Low Harness page 132) will cause shuttle marks, usually toward the selvage.



SHUTTLE RIDES ON THIS EDGE

THE FIFTH *and final article of this series, to appear in an early issue, deals with broken ends, creases, dirty knots, mis-reed, floats, double ends, loose ends, warp streaks, split ends, warp stripback, temple marks, tight ends, oil spots, and wrong draw.*

Improve Center Bar Performance

THE CENTER BAR is a humble but fundamental item in the finishing plant. Assembled here are all the facts you might want to know about it, plus a few valuable suggestions for improving its performance.

By WILLIAM O'KEEFE
United Piece Dye Works

EXCLUSIVE

THE FACULTY for batching a soft roll of cloth when desired, makes center bar winding preferable to contact winding, especially where crushing of fabric or finish must be avoided.

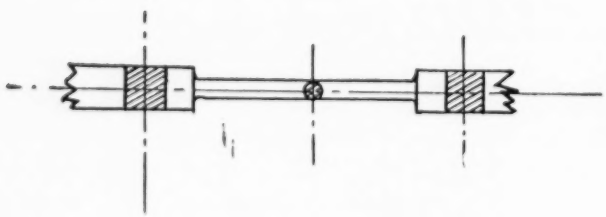
Square cross-section bars are traditional. They are readily procurable, inexpensive compared to other shapes, and are reasonably strong for any given weight. The square bar drives a wood shell satisfactorily and won't roll when rested on floor or table. Considering all variables, the 1¼" square hot-rolled steel bar is best. It can take the range of usual loads without bowing.

Section modulus for 1⅛" bar is only 0.168 compared to 0.230 for 1¼" bar. At midpoint of 66" span, operating stresses for normal load would be only 27,500 psi dry and 58,000 psi wet for the 1¼" bar while stresses for the 1⅛" bar would be 39,000 psi and 80,000 psi, respectively.

In order to make shell usable when warped, square hole in center is made slightly larger than center bar. This gives rise to characteristic bumping sound. The minimum effect of a shock loading thus created is to double the static stress. The turned down bearing areas commonly fail. Either they wear or else break as a result of fatigue cracking where bearing area meets unreduced section.

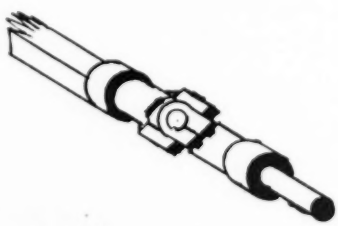
The inner end of bearing surface is first part subject to failure. At fillet here, sharp corners left by cutting tool multiply stresses which may induce small but fatal crack. Average fillet of commercially available center bars has a radius of 0.02". The turning down of 1¼" stock to ⅞" diameter multiplies shear stress 2 or 3X at fillet. A 1/16" radius fillet at this point would solve problem. Round forks slightly to accommodate larger radius of fillet.

Objections to other shape center bars: polygonal cross sections require close tolerances in shell fit, making insertion or extraction

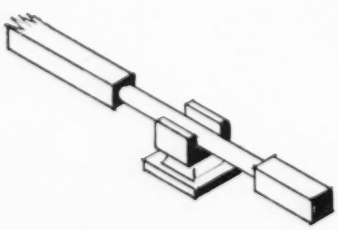


1¼-INCH SQUARE hot-rolled steel bar is best. It can take the range of usual loads without bowing. Sharp corners left by cutting tool may cause failure at inner end of bearing surface. 1/16-inch radius at fillet solves problem of shear stress.

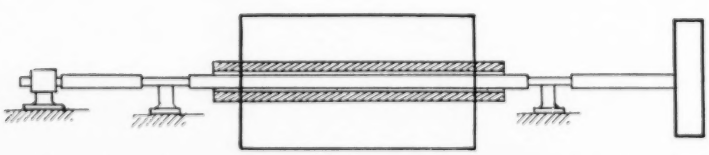
POLYGONAL CROSS SECTIONS require close tolerances in shell fit. Triangular cross sections yield less strength than square bar.



UNIVERSAL JOINT on driven end reduces distortion and wear.



TURNED DOWN PORTION of square bar rotates in cast iron or bronze-bushed open fork. Hardening powder prolongs life.



INBOARD SUPPORTS may be necessary for narrow cloth on wide machines. Bronze supports may be removed to accommodate wide fabric.

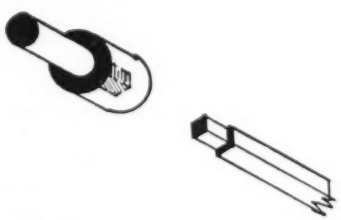
from warped wood shell a difficult task; triangular cross sections yield less strength for given weight.

Turned down portion of square bar rotates in cast iron or bronze-bushed open fork, secured by a steel pin. Driven end of bar is loosely fitted in drive socket of pulley or sprocket. Driven end can also be coupled to driving element by means of universal joint, thus reducing distortion and wear. Hardening powder applied at driven end and socket inserts will prolong life of parts.

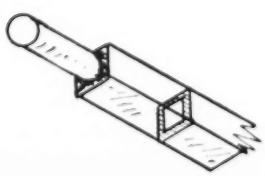
Inboard supports for narrow, heavy cloth rolls running on wide machines are good practice. Bronze supports can be removed when wide fabric is being handled.

Standardization of wood shells is mandatory due to large inventory. Two lengths would meet most requirements. Dimensions of center hole in both length shells should be identical, allowing: interchange of bars, running short shells on wide machine, and salvage of long shells by cutting into short lengths.

If center bar is to carry fairly light loads and must be handled frequently, operator fatigue can be averted by substituting a square steel tube with solid round bearing pieces welded onto tube ends. Light metal alloys are costly, while their low tensile strength overrides weight advantages for this application.



DRIVEN END of bar is loosely fitted in drive socket of pulley sprocket. Hardening powder helps at driven end of socket inserts.



SQUARE STEEL TUBE may be substituted for light loads and to avert operator fatigue.

Finishing Plant Safety Topic of N. C. Meet

Staff Report

"Safety in a finishing plant is the supervisors' responsibility," Sydney Cone, president of Cone Finishing Co., told textile men attending the North Carolina Statewide Industrial Safety Conference at Winston-Salem, on May 15. "Without good housekeeping in your plant, you can have neither an effective safety program nor high quality work, and frequently the condition of a supervisor's desk will tell you what level of safety and efficiency to expect in his department," added Mr. Cone.

Following Mr. Cone's remarks, a panel discussion of "Safety Problems in the Dyeing, Bleaching, and Finishing Industry" was participated in by about 75 supervisors and personnel men from representative North Carolina finishing plants.

The panel, shown from left to right in the above photograph, was: Wallace Bourne, safety director, Cone Mills Corp., Greensboro, N. C., chairman; J. L. James, manager, Erwin Mills No. 3, Cooleemee, N. C.; J. H. Riddle, vice-president and general manager, North Carolina Finishing Co., Salisbury, N. C.; Paul Meadows, personnel director, Hanes Dye and Finishing Co., Winston-Salem, N. C.; Dwight H. Owen, industrial relations manager, Cranston Print Works Co., Cranston, R. I.; and Mr. Cone, who was panel leader.

Dyeability of Acrilan

In a paper delivered before the spring meeting of the Textile Engineering Division, American Society of Mechanical Engineers, S. Jack Davis of The Chemstrand Corporation outlined advances to date in the dyeing of Acrilan.

Acid, Chrome, and Premetallized Dyes. Most commercial fastness requirements can be met with these classes of dyestuffs. 120-160 F washfastness can be realized by dye selection, and light fastness values of from 20 - 80 hours have been obtained. Generally, there is little crocking.

Dispersed Acetate Colors. Dyeings with dispersed acetate colors are good with respect to wash fastness so far as color changes are concerned. Some staining of nylon and acetate occurs during washing (characteristic of the migrating properties of acetate dyes).

Developed Acetate Dyes. This class of dyes is very useful for obtaining heavy shades on Acrilan having good wet and light fastness properties.

Vat and Soluble Vat Dyes. Best results with respect to light and wash fastness thus far have been obtained, but work with this class is incomplete at present.

Pressure Dyeing and Assistants. Pressure dyeing and the use of dyeing assistants have not been thoroughly investigated as yet since Acrilan can be successfully dyed without resorting to these techniques. Such methods could possibly be used to shorten the dyeing time or improve color yield.

Tinting. Tints can be recommended for use on 100% Acrilan, on Acrilan-viscose blends, and on Acrilan-wool blends.

Union and Cross Dyeing. Union dyeing and cross dyeing of Acrilan-wool and Acrilan-viscose blends are being investigated. Certain recommendations can be made.

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If we really want to fight for our American way of life—

It's Not Too Late!

By CAPTAIN EDDIE RICKENBACKER
President and General Manager
Eastern Air Lines, Inc.

THERE IS no need for me to underline the grimness of the times, even in the face of our national prosperity, for we have been and we remain, spectators, observing some of the most disturbing chapters in global and domestic history in the making.

In a global sense the divided world shows no signs of becoming less divided. And the "cold war" with Communism has brought serious dislocations in the lives of nations of free men.

From a domestic viewpoint, our enormous gains in science, in techniques, and in productive experience, have resulted from more than a century and a half of American freedom for which we should be thankful to God. Science, machinery, and laboratory skills are ready to go still further, ready to exceed now even our fantastic modern dreams.

But in this atmosphere of apparent prosperity I feel compelled to sound a note of concern about some other matters that are more important to us and our country than material gains.

Something has been wrong—something is still wrong—with America!

One thing that has been wrong with America was righted, at least for the time being, last November. Before that, for more than a decade, our priceless electoral prerogative had been shamefully neglected.

In 1940, some 62 per cent of the eligibles voted for a president; in 1944 the percentage was 57 and in 1948 it sank to 52.

What happened last November gave great satisfaction to those of us who had despaired of the average American's concern with affairs of state. Electors by the unexpected millions burst from their often and loudly criticized complacency to demonstrate that their stupor was only a chronic condition—not so acute that it could not be cured by generation of some good, old-fashioned American indignation.

Nevertheless, this great land of ours—this America that I love better than life itself—is traveling down the wrong highway. In the midst of prosperity we are forgetting the spiritual values and the moral courage passed on to us by our forefathers who founded this nation.

I think I can speak with some authority on the subject.

For where is there another land in the world where a young man can come from the wrong side of the tracks, as I have, and graduate into a relative position of leadership and affluence because of the very freedoms, liberties, and opportunities this land offers? Where is there another land? There is none.

I am a first generation American, whose parents 75 years ago migrated from Switzerland. They came to America to take advantage of the opportunities that existed here—came here to enjoy the freedoms, liberties, and laws of this land.

My immigrant parents taught me and six other members of our family to enjoy and appreciate the freedoms of this country. They taught us how to work. They taught us that we could never expect something for nothing, nor more for less. They taught us to be frugal. They taught us, above all, to love America!

We are fortunate and grateful heirs of the Pilgrims, the Puritans, and the Cavaliers who came to America almost 300 years previously. Through indescribable hardships they carved out a new nation founded upon belief that all mankind is born to be free—physically, mentally, and spiritually free—as a matter of right from the Creator and not as a mere privilege granted by the State.

Further, it lies within the power of each human being in the system of free enterprise to succeed or fail according to his own character and efforts. I am the beneficiary of those who in the meantime have worked and fought to defend and develop this country and its institutions for future generations—and to all of them I make my grateful acknowledgments.

Few men, if any, have cheated death as often as I have in the past forty-five years. And it wasn't because of any super-knowledge or super-ability on my part, but because of my great faith in the Power

Military strength, alone, will not save this nation from the perils which surround it, says Captain Rickenbacker. Dollars and bullets are not enough. We must return to the principles on which our nation was established. We must revive the Spirit of America if we are to retain our precious heritage for future generations.

CAPTAIN RICKENBACKER'S life has been filled with adventurous activities and great achievements. In his early 20's he attained nation-wide fame in automobile racing. In World War I he was America's Ace of Aces, winding up as Commander of the 94th Aero Squadron, being credited with 26 victories, and receiving the highest American and French military awards. Following some years in high executive positions in the automobile industry, he entered the aviation field in 1929, became general manager of Eastern Air Lines in 1935 and president and general manager in 1938. During World War II his activities included several special missions for the Secretary of War to European and Asiatic countries, the South Pacific and the Aleutians. It was on a flight across the Pacific in 1942 that he was forced down at sea and finally was rescued after three weeks on a life raft.

Above, and the desire to contribute something to this land of mine and to its people for what our country and they have given me.

But faith is not alone for the individual. If one man needs it, how much more does a nation need it? We are becoming weak today because, instead of following the enduring spiritual principles upon which our nation was founded, we have substituted material wealth as the yardstick with which to measure success.

As individuals, we have been selfish and preoccupied with material ambitions. We have felt that we needed more and more of the material things of life, and have forgotten the need of more and more of the spiritual side of life—of simple Christianity.

There is no greater weapon in the world than the moral force that goes with the strength and spirit of Christianity. I reiterate—there is nothing that can equal Christianity. And when I say Christianity, that includes the Jewish faith or any other faith—as I am talking about faith itself—faith in a Supreme Being.

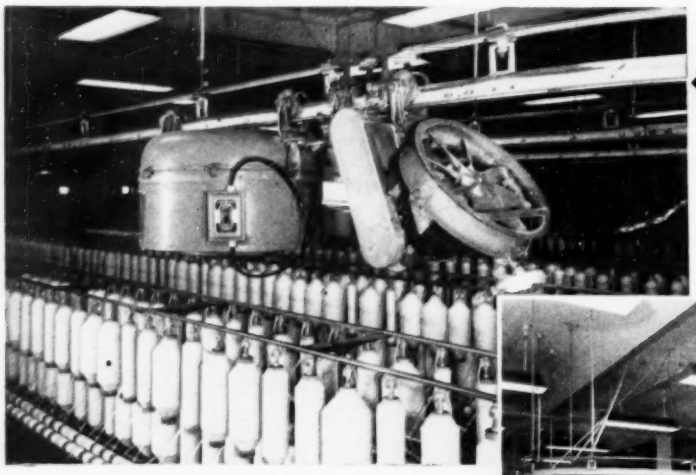
The most important thing that has happened since the birth of Christ is the birth of America. The second never could have happened without the first. The Colossus that we call America has been the product of the idea of the sovereignty of the individual that Christ brought to the world.

Our Founding Fathers believed in the Ten Commandments and the Golden Rule. Within that moral code they had a complete way of life—in matters spiritual, political, social, and economic.

It was obvious that to sabotage America's faith in America it was necessary to transfer the people's faith in God to Faith in the State. Morality in politics, business, and private contracts had to be broken down. The strategy has been to undermine the foundations on which that morality rested and, in the chaos that followed, offer the Total State as the only alternative to continued chaos.

Thanks to our science and industry, we are not short of weapons, but weapons are no substitute for the will to fight and the courage to die should an emergency arise. Our military strength does not seem to frighten our enemies, and the reason may be that there is so little moral strength—so little singleness of purpose—behind it.

We must not make the mistake of thinking that the outcome of the struggle between Communism and freedom will be determined by military and



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For clean ceilings and clean frames.

How do your spinning rooms compare with this for cleanliness? Photo taken during normal operations.

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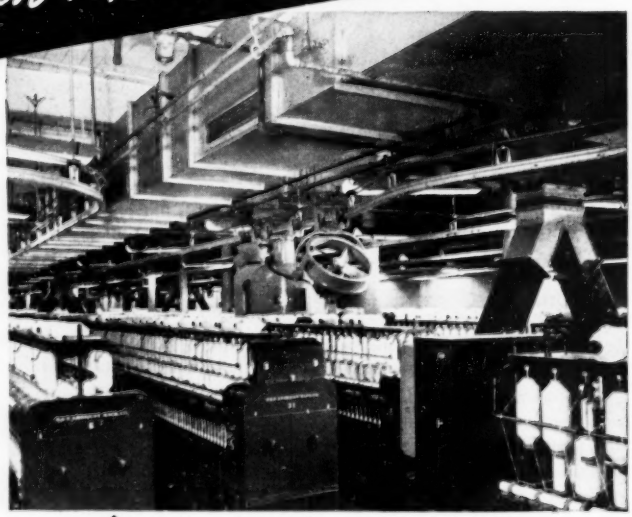

Note clean ceiling even over air duct. This mill no longer "blows-down" ceilings.

Overhead cleaning is recognized today as standard practice in mills producing high quality yarn. It is almost axiomatic that a thoroughly cleaned spinning room will produce clean yarn.

American MonoRail Automatic Cleaning for over and under the frame and for ceiling cleaning will prevent lint accumulation, produce better running work, reduce costs, and increase mill efficiency.

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economic power alone.

In this period of moral laxity, many people believe that the task of bringing America back to the Golden Rule and the Ten Commandments will be a most difficult one. But the wages of economic sin can be measured in dollars and cents, and I am convinced that business morality can be sold just as surely as soft drinks and radio sets can be. The connection between a nation's morals and its material welfare is simple and certain.

We must revive and instill the spirit of America. America is the spirit of man, the spirit that is in your heart and mine, and that spirit must be expanded. It must be re-kindled, not only in ourselves of our generation, but further, it must be implanted in the younger generation, or America must go the way other lands and other peoples have gone.

Instead of our young people knowing and understanding the homely virtues of industry, and loyalty, and self-reliance, their chief concern now seems to be to complacently lean on government subsistence and let taxpayers foot the bill. The trend is to turn our very lives over to the Government which is to feed and control us.

The growth of the activities of the Federal Government is revealed by the increase in the federal budget from some three billion dollars in 1936 to over 71 billion dollars in 1951, and over 85 billion dollars demanded by the President for 1952-1953.

The national debt has grown from one billion dollars at the start of World War I to $265,583,000,000 as announced last spring by George M. Humphrey, Secretary of the Treasury. This means a debt of nearly $7,000 for every family in the United States.

Our departures from the covenant of the Founding Fathers are startling. The most fearful event of these times is the colossal expansion of the national government and the constant increase of executive power within the government. The trek back to free enterprise, and the American Way, will not be easy.

For decades the income tax has furnished the government with more and more "easy money," which has led to the gradual growth at the national capital of functions that might better have been exercised by the states or even by local government.

The same process of centralization, though in less degree, has taken place in several states which have taken over functions that might better have been executed by local government. Barring rare examples, local government is, or can be made, more honest, efficient, and responsive to public interest, than state or national government.

By every step we take toward making the Government caretaker of our lives, we move toward making it our master. Paternalistic government can gradually destroy, by the immediate advantages of subsidy, the will of the people to maintain a high degree of responsibility. This will cause the abdication of individual responsibility, which is inevitably followed by further concentration of power in the government —leading ultimately to absolute power over our lives and freedoms.

We have demonstrated that our system of free enterprise, run by free people, can out-produce by a wide margin any other economic system. The very core of what we mean by Americanism is individual liberty, founded on individual responsibility, equality before law, and a system of private enterprise that aims to reward according to merit.

Strange as it may seem, there are some in this country of greatest freedom, greatest happiness, and greatest prosperity, who lend willing ears to the alien propaganda which says that we, the best fed, best clothed, and best educated people in the history of the world, should discard our social, economic, and political systems—our way of life—and adopt the totalitarian pattern.

I am not afraid that our people will directly and intentionally exchange our free, happy, and prosperous society for the slavery of Russian totalitarianism, or repeal the Bill of Rights. But there is some danger that we may lose our freedom without knowing it—that totalitarianism may overtake us before we are aware of it.

Freedom is more than the Bill of Rights.

Freedom, if it is to have meaning, must continue to find expression in the everyday lives and affairs of the people. Freedom is more than a law, or an abstract idea—it is a living reality.

How can we lose it unintentionally?

Freedom begins to perish when it becomes inconvenient or difficult for one to exercise it. Freedom exists only in its being daily exercised and enjoyed.

Recent trends have been toward community responsibility for the individual welfare at the local, state, and national levels. Over 30 per cent of all income is taken by government through taxation—and government (local, state, and federal) in turn disburses subsidies, bounties, benefits, and permits to the individuals.

More and more we are moving in the direction of production for a community storehouse upon which all of us are becoming dependent for our own sustenance and for the operation of our various enterprises. The distribution of the variety of benefits from the common storehouse necessarily is in the hands of persons who are employed by local, state or national agencies.

When Andrew Jackson became the champion of the rights of the masses 125 years ago, the "spoils" of office were negligible. Government, at all levels, was "little." No one was beholden to government or afraid to speak out and take issue with a local, state or national official.

Now, when governments collect and disburse each year more than 30 per cent of the aggregate of all incomes, and when governments are our chief business organizations, and regulators of private business, all citizens are substantially beholden to and dependent upon the favors of government at one level or another, and must deal with the officials of governments in seeking to obtain their fair shares of benefits, subsidies, and permits.

As we have observed in the efforts of the new national administration, it is not easy to correct a trend in government that has gained such momentum, but it rests on men and women such as you readers, who

(*Continued on page* 159)

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in processing wool, synthetics, cotton and blends

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SUNOTEX WO-220 For worsted "tops."	"Tops" treated with WO-220 will not discolor during storage. WO-220 scours easily, leaves wool in perfect condition for dyeing, even in lightest pastels.
SUNOTEX WO-410 For worsteds and high-grade woolens.	Gives greater softness to knitting and blanket yarns.
SUNOTEX WO-420 For worsteds and high-grade woolens.	Gives same softness to knitting and blanket yarns as WO-410, but is used to overcome surface friction during weaving.
SUNOTEX RSO-48 For processing knitting and blanket yarns.	Has high antistatic properties. Is ideal for use where humidification is not available.
SUNOTEX TS-48 For processing dyed wool stock and yarns.	Can be scoured easily. Does not stain or develop odors.
SUNOTEX RWO-420 Used in spinning suitings, blanketing, carpeting, felts and wool blends.	Retains its outstanding scourability for long periods. The ideal replacement for lard oil—used where surface lubrication of wool is desirable.
SUNOTEX TSO-615 An inexpensive product for processing lower quality wool blends and reworked wool blends.	Has sufficient body to protect fibers. Eliminates fly and static problems.

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SUNOTEX RWO-48 A softener and plasticizer for gelatin and other binders in sizing of viscose and acetate yarns.	Provides excellent penetration and uniform plasticizing, resulting in smooth thread surfaces.
SUNOTEX RSO-48 For processing nylon and similar synthetics where static is a problem.	Provides excellent lubrication of the thread surface. It reduces static even when used in quantities of 1% or less.
SUNOTEX TS-48 Trough oil on full-fashioned machines. Also an all-purpose fiber lubricant.	Scours easily from viscose, acetate, nylon and mercerized cotton. Does not stain or develop odors.
SUNOCO FIBRLUB L-220 A nonemulsifying coning oil used in the throwing of nylon for full-fashioned hosiery.	Lubricates the sized threads, reduces "roll," increases snag resistance, prevents corrosion, produces a more uniform stitch.

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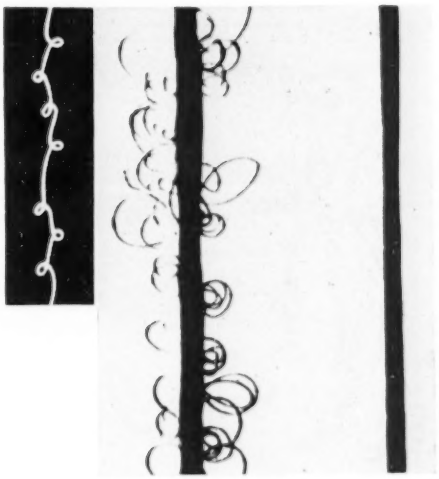
Textured Yarn

stirs technologists

Conventional yarns can be converted into something new by the Du Pont developed "textured yarn" process. Fabrics made from these yarns have:

- **unusual appearance**
- **uniformity**
- **high resistance to fuzzing and pilling**
- **high bulk**
- **high covering power**
- **subdued luster**
- **dry hand**
- **crispiness**



TEXTURED YARN (left) shown in this photomicrograph was made from the continuous filament acetate yarn at the right. Note tiny loops in filaments.

DETAILS of a Du Pont invention — known as the "textured yarn" process—which accomplishes a physical modification of any textile yarn, adding bulk, texture, covering power, dryness of hand, and other effects, were revealed for the first time at a special session of the American Association for Textile Technology. Dr. Donald F. Holmes, manager of sales development for Du Pont's Textile Fibers Department, dwelt at length on the aesthetic and physical properties of this basically new yarn structure (see abstract of paper on page 145.)

How much of an impression the introduction of textured yarn made on the industry's top notch stylists and fabric development men may be judged from the type and scope of questions directed at Dr. Holmes immediately following his formal address.

Q. Can process be applied to wool or blends of wool and synthetics?

A. Yes. There is nothing to limit application to any known textile fiber. However, the texture effect is not as drastic on spun yarns as it is on filament.

Q. What is the basic type machinery required to produce textured yarn?

A. We are not ready to talk about the process at this time. [Reporter's note: it is believed that the process involves subjecting filament to periodic blasts of air at elevated temperature during throwing. Machine builders have been invited to develop and market suitable machinery with process information supplied by Du Pont.]

Q. How often does loop appear on filament?

A. Loops occur with random frequency about every ⅛ to ½" depending on loop size or denier of filament.

Q. To what extent can bulk be increased by textured yarn?

A. Normally, 30%. In some cases, bulk has been increased 50%.

Q. Is looping controllable in the texture process?

A. The intervals between loops are controllable in a gross way. Loops occur at random statistically (plus or minus a desired interval).

Q. Does the crimping which occurs during knitting cause any distortion of loops in the textured yarn?

A. No serious difficulty in knitting should be expected but the question can't be answered specifically at this time.

Q. What effect does the size of the loop have on the fabric?

A. Longer loops give a softer hand and a more nappy appearance. The converse is true with shorter loops.

Q. Will Du Pont donate the process to the textile industry?

A. That is seriously doubted, but since the texture process is not fully developed, no final decision can be made as to arrangements for industry use.

Q. Will fabrics constructed with textured yarns be subject to shrinkage in wet finishing due to the loop formations?

A. No. Filaments are not under any strain in textured yarn. Consequently, the yarn in the grey fabric is relaxed and won't shrink in finishing.

Q. Is there any difference in dye pick-up between loops and straight sections of the textured yarns?

A. There is no marked difference in shade between loops and straight sections. Textured yarn will dye uniformly provided the filament selected is uniformly dyeable.

Q. Can the texture process be applied to all deniers as well as high tenacity yarns?

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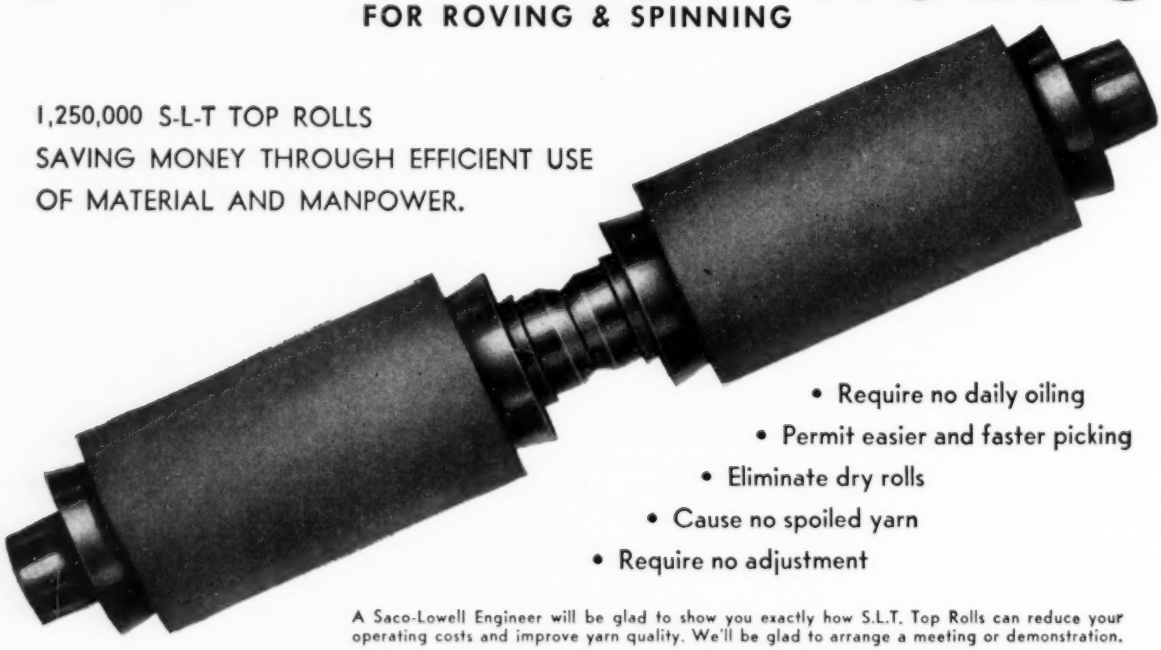
SAVING MONEY THROUGH EFFICIENT USE
OF MATERIAL AND MANPOWER.



- Require no daily oiling
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A Saco-Lowell Engineer will be glad to show you exactly how S.L.T. Top Rolls can reduce your operating costs and improve yarn quality. We'll be glad to arrange a meeting or demonstration.

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A. Yes, provided that the base yarn is strong enough to withstand looping without falling apart.

Q. What is the influence of a resin finish on looped yarn?

A. There is no reason why any resin finish should destroy loops. Resin finishes should have the same effect on a textured yarn as on a similar yarn which is not textured.

Q. Can textured fabrics be napped?

A. Yes. Severe napping may be used to break loops in order to give the fabric a softer hand resembling a spun yarn effect.

Q. Have any experiments been conducted with silk fibers?

A. Silk hasn't been evaluated yet. We are absolutely certain silk can be textured.

Q. Are loops stable to laundering and dry cleaning?

A. Yes.

Q. What would be the soil retention characteristic of looped yarn, particularly yarn manufactured for carpets?

A. There is not enough experience accumulated to date on end uses of textured yarn to answer properly.

Normal Yarns Made Unusual by "Textured Yarn" Process

A new process which will permit endless variation in both knitted and woven fabrics, and will, in effect, return the art of fabric design to individual textile mills, has been developed by the Du Pont Company's textile Fibers Department.

The first announcement of this invention for converting conventional yarns into something new—known as the "textured yarn" process—was made recently by Dr. Donald F. Holmes, sales development manager of the department. Dr. Holmes, speaking before a special meeting of the American Association of Textile Technologists, described the process as making yarns "distinctly different from either spun or filament yarns."

Dr. Holmes said the Du Pont Company has no intention of going into the commercial manufacture of this product. It has applied for patents covering both the product and the process, and plans to make the process available to the trade under a licensing arrangement at a later date. The process is the result of two years' research by the Textile Fibers Department.

"The textured yarn process accomplishes a physical modification of any textile yarn, adding bulk, texture, covering power, dryness of hand, and other effects, depending on process variations and the choice of the basic yarn," he said. "The process gives yarns which are adaptable to many fabric constructions, both in knitted and woven fabrics."

Dr. Holmes explained that a textured continuous filament yarn is characterized by many tiny loops contained in each individual filament, with only a few of the filaments in the yarn looped at any one point. Between each loop of any single filament, he said, there are relatively long straight sections so that both ends of the loop are anchored by adjoining filaments into the yarn.

Textured yarn will make available to textile technologists "an entirely new tool with which they can combine the basic properties of the various fibers with new fabric geometries," he declared.

"Changes in yarn characteristics will permit each mill to impart its own individuality to its fabrics," Dr. Holmes added.

Pointing out that the process still requires further development, Dr. Holmes described the following four-point program to be carried out by Du Pont:

1. Although Du Pont is not planning commercial manufacture, production of a limited amount of textured yarn for samples will be carried on at several textile fiber plant locations.

2. The company will continue establishing sources of supply for machinery parts required for the process.

3. Machinery manufacturers will be supplied with process information so they can assist in the development of conversion parts of existing textile machinery or the development of a specific machine for the process.

4. The company will continue to improve the process and the yarn quality, and will investigate new markets and new end uses to establish what will be required of the yarn to fit into each end use.

Dr. Holmes declared that both natural and man-made fibers can be extensively modified through the textured yarn process. He added that various fibers can be blended in the texturing process.

"The luster is intermediate between continuous filament and spun yarn fabrics. The hand is much drier and warmer than corresponding continuous filament fabrics and generally crisper than spun yarn fabrics. Crispness can be varied, however, by change in loop size or in filament denier. Shortening the loops and increasing the denier per filament will accentuate crispness. Longer loops and lower filament denier will lead to softer fabrics with a more pronounced nap."

FABRIC PROPERTIES RELATIVE TO YARN CONSTRUCTION

Type Yarn	Thickness (in.)	Weight (oz/sq. yd.)	Bulk (cc/gm)
Continuous filament	.007	2.4	2.18
Sun	.013	2.8	3.45
Textured	.016	2.1	5.81

ELASTICITY AND BULK VS. FILAMENT MODIFICATION

	Textured	Crimped	Spiral
Elasticity	Low	Moderate	High
Bulk (under tension)	High	Low	Low

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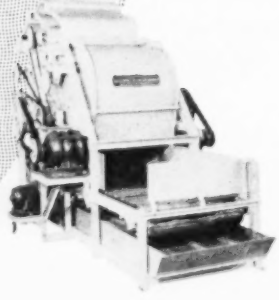
Every bit of spinnable fibre you see in your waste represents a loss of money!

CEN-TENNIAL'S SRRL OPENER is designed to eliminate this waste . . . and does an excellent job of it.

For instance: one mill (we'll give you the name on request) reports a 14.3% decrease of spinnable fibre in waste which amounted to a yearly saving of $22,400 on cotton stock. The point is, CEN-TENNIAL can save your cotton and save you money . . . CAN YOU AFFORD *NOT* TO EQUIP YOUR OPENER ROOM WITH THE CEN-TENNIAL OPENER?



CEN-TENNIAL
COTTON GIN COMPANY

Columbus, Georgia

Emphasis on Statistical Methods

in textile mill quality control programs

Staff Report

ABOUT 100 members and guests of the Textile Division, American Society for Quality Control, meeting in Philadelphia's Convention Hall on May 29, heard speakers describe how textile mills are emphasizing statistical methods in their quality control programs.

Edward S. Rudnick, director of research for Wamsutta Mills, New Bedford, Mass., explained how Wamsutta uses control charts and quality level inspections to keep a close check on processing variables, and has thereby decreased ends down in spinning and weaving and brought about a general increase in quality consciousness throughout the mill (see abstract of Mr. Rudnick's paper following).

Concluding the morning session, a panel moderated by D. S. Hamby, N. C. State College, Raleigh, N. C., discussed evenness testing applied to textile quality control. The panel was composed of representatives of the development or sales organizations of four of the principal evenness testers: Dr. L. H. Hance, Institute of Textile Technology, Charlottesville, Va.; F. J. O'Neil, Pacific Mills, Lawrence, Mass.; S. E. Patrick, Saco-Lowell Shops, Biddeford, Me.; and G. E. Archer, Uster Corp., Charlotte, N. C.

The panel was in agreement that both capacitance- and mechanical-type evenness testers are essentially measuring the weight per unit length of sliver, roving, or yarn, although the results may be obtained and presented in different ways. Neither type of tester is significantly affected by the changes in relative humidity normally met in the mill.

The change in percentage non-uniformity due to changes in relative humidity is not numerically greater than the percentage change in moisture content of the yarn, while one member of the panel said that it is considerably less. In the usual range of 4 to 10 per cent moisture content, this is insignificant in comparison with the 100 per cent or greater nonuniformity found in the average yarn.

Similarly, yard-to-yard variation in the components of a blended yarn does not materially affect non-uniformity readings. Tests show that both types of testers are equally affected by blend variation.

In the afternoon session, A. G. Klock, quality control superintendent for Bigelow-Sanford Carpet Co., Thompsonville, Conn., described how the hard-to-measure visual characteristics of carpets may be given numerical ratings, and so handled by the methods of statistical quality control. An abstract of his paper is included.

Control Charts and Quality Level Applications in Textiles

By EDWARD S. RUDNICK
Wamsutta Mills

(*Abstract*)

MOST cotton mills divide their quality control programs into four divisions:

a. Control of the raw cotton by the cotton department.

b. In-process controls by roving departmental inspectors.

c. Cloth room and finished goods 100% inspection.

d. Laboratory controls, which include all of the foregoing.

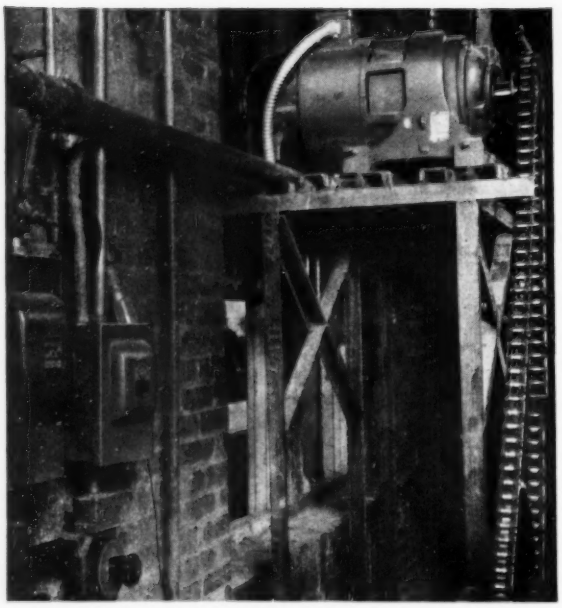
The main function of a quality control chart is to separate chance variation from variation due to a significant change in the process being investigated. When averages of two or more test results are plotted on a time basis, significant process trends can be noted even though all might be within limits. By plotting the range of the individual readings making up the average, the laboratory can quickly detect departures from the normal variation which past experience has shown should

Mr. Rudnick

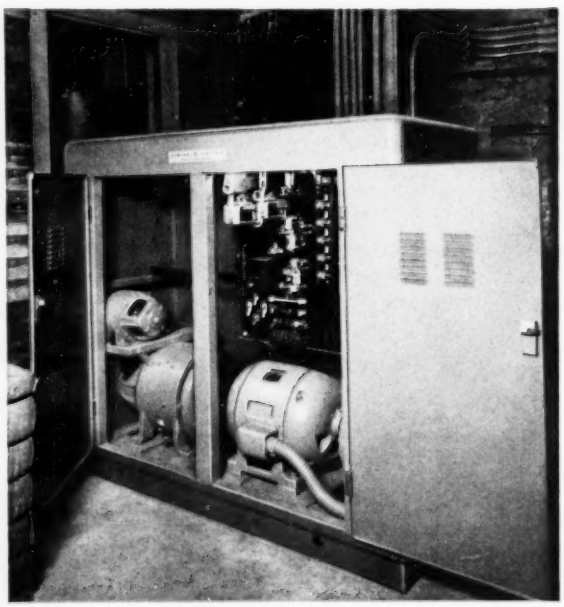
ENGINEERING REPORTS:

MAN-HOURS REDUCED—One operator co-ordinates over-all speed of No. 1 finishing range simply by turning speed-control rheostat. For closer adjustment of the speed and tension between Tommy Dodd, No. 2 dry cans, and padder, a rheostat is provided for each motor. Resulting accuracy means that range operation will be simple, speedy, and economical.

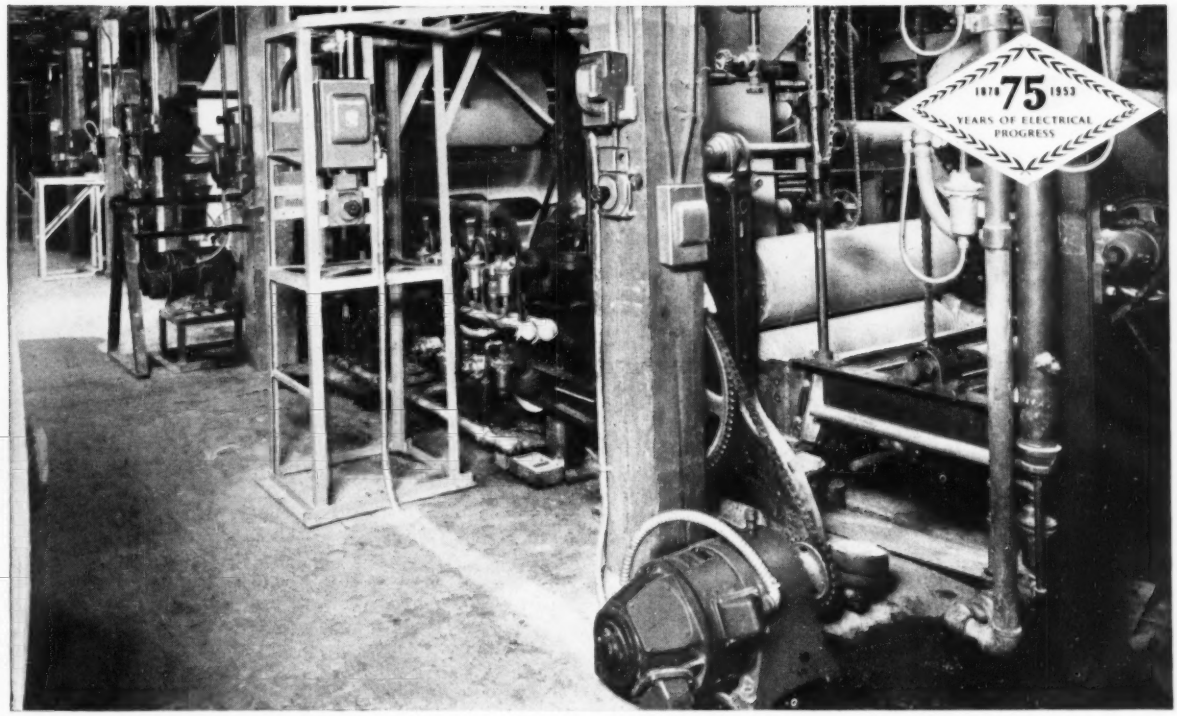
"G-E packaged range drives take



CLOSE TENSION CONTROL is provided by this powerful G-E gear-motor which drives the Tommy Dodd for the No. 2 finishing range. Finer quality dyeing is thus made possible.



PRODUCTION AREA SPACE SAVED—Compact design of 50-hp G-E packaged power unit made locating it away from the work area easy. Unit is delivered ready to operate.



COMPACT, UNIFIED LAYOUT of the remainder of the No. 1 finishing range is shown here. By installing a G-E packaged drive, the production area could be planned more efficiently, and working conditions improved. Compensating gate rheostats throughout the range automatically keep fabric tension, speed more accurate, respond quickly for smooth co-ordination.

the guesswork out of finishing"

"They're our best modernization expenditure," adds A. J. Leaderman, President of Rockland Bleach and Dye Works

"Our experience with our two new General Electric packaged range drives has been gratifying . . . they have taken the guesswork out of range work," reports A. J. Leaderman, President of the Rockland Bleach and Dye Works in Baltimore. "We feel that they have been our best expenditure out of more than a half-million dollars we have spent on modernization." Here's why:

Installation costs were low

All of the G-E equipment in the adjustable-voltage d-c drive systems were supplied in easy-to-handle "packages." These units were standardized—mass-produced—to lower costs and simplify installation. All were factory-wired and tested, delivered ready for operation. The flexibility of this equipment permits Rockland Bleach & Dye to make plant-layout changes easily and quickly.

Operations prove highly efficient

Any desired operating or jogging speed within a wide speed range can be set on the two new G-E packaged drives. Over-all speeds are easily controlled from a central station. Compensating gates provide close co-ordination of all motors. The drives accelerate and decelerate smoothly and quickly. Finishing operations are more flexible—individual units can be disconnected from either range.

G-E application engineers co-operated closely with Rockland engineers to unify these two drive systems. If you plan to install a new range, or extend or modernize an existing one, they can help you the same way. Ask your local G-E Apparatus Sales Office about it. General Electric Company, Schenectady 5, N. Y.

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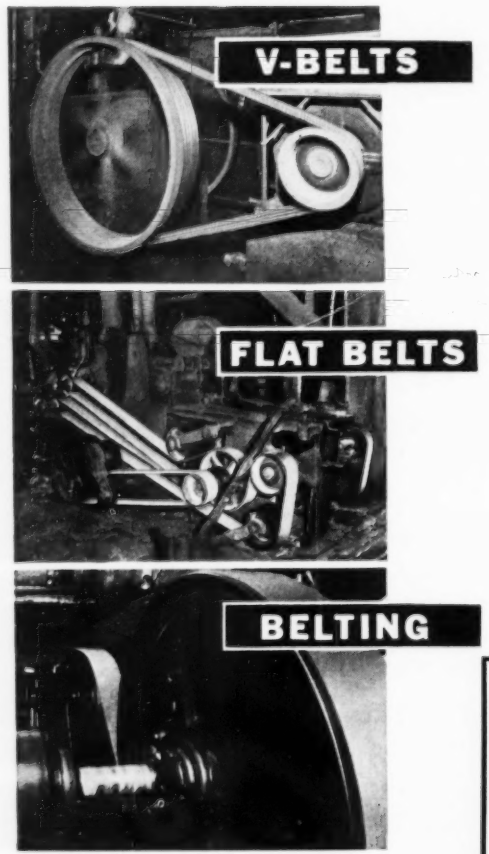

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WAMSUTTA MILLS
SHEET INSPECTION

Color _____ Size 1 Hem 4"

Defects	DEGREE 1	2	3	4	Total	Weight	Score
COTTON:							
Neppiness						1	
Alabama Weasle						1	0
SPINNING:							
Warp Slub	II				2	2	4
Filling Slub	IIII	I			6	2	12
Loose Yarn						2	
Uneven Yarn						1	
Coarse Yarn						1	16
WEAVING:							
Snow Ball	II				2	1	2
Drag-in	I				1	2	2
Broken Pick						2	
Broken Ends						3	
Kink, Warp						2	
Kink, Filling	IIII				4	2	8
Oil - Grease						2	
Hitchback						2	
Hole						3	
Scratch-up	I				1	2	2
Skipping						2	
Float						2	
Thin Place						2	
Cuts						3	
Mixed Filling	II				2	2	4
Reed Mark						1	
Temple Mark						1	
Wrong Draw						2	25
Selvage Trimming	I				1	1	1
Bad Knots						1	
Loose Yarn	I	I			3	2	6
BLEACHING:							
Harshness						2	
Bowiness	I				1	2	2
Stain						2	
Whiteness						2	4
SHEET FACTORY:							
Crooked Hem						1	
Bad Stitching	I				1	1	1
Poor Barring						1	
Pressing and Folding						1	1
TOTAL					24		44

Comments:

THE "SCORE CARD" used at Wamsutta for quality level determinations to finished sheets after they have been subjected to a 100% inspection.

be expected from a particular process.

After it is determined which processes are to be controlled, usually the key processes of the mill, the question of sample size must be decided. This is dependent on past experience with the process, and the size of the sampling error which can be tolerated. For example, at Wamsutta four bobbins from each roving frame are tested each day.

The items controlled for yarn are mean size, range of size, mean strength, and range of strength for each count each day.

Daily reports interpreting the charts are distributed to the general manager, the superintendents, and the overseers. Weekly reports are prepared for each item, so that the overall quality records of a department can be compared from week to week.

The program is flexibly designed so that control limits can be narrowed as quality standards are raised. When a process runs almost continually in control, the frequency of testing is reduced, rather than further narrowing the control limits.

In addition to the spinning mill processes, charts are maintained for the grey and finished cloth strengths, departmental waste records (see TEXTILE INDUSTRIES, July, 1952, p. 67), and even for accident frequency.

The accompanying form is the "score card" used at Wamsutta for quality level determinations of finished sheets after they have been subjected to a 100% inspection. There are four degrees of seriousness for each defect; the degree of seriousness is multiplied by the weight assigned to the defect to determine the score for each defect. In the example, two warp slubs were found; multiplied by two, the weight assigned to that defect, a score of four is determined for warp slubs. Number of defects, departmental source, and overall score are totalled separately. Under "comments," the quality level inspector notes if any defects were serious enough to prevent the sheet from being a First, and if the dimensions are beyond tolerances.

These quality level determinations serve as a useful check on the 100% inspectors, and of each department's contribution to overall sheet defects.

Among the results of Wamsutta's quality control program are a consistent downward trend in process variabilities, a decrease in ends down in spinning and weaving, and a general increase in quality consciousness of personnel throughout the mill.

Quality Control of Visual Characteristics in Carpet Manufacture

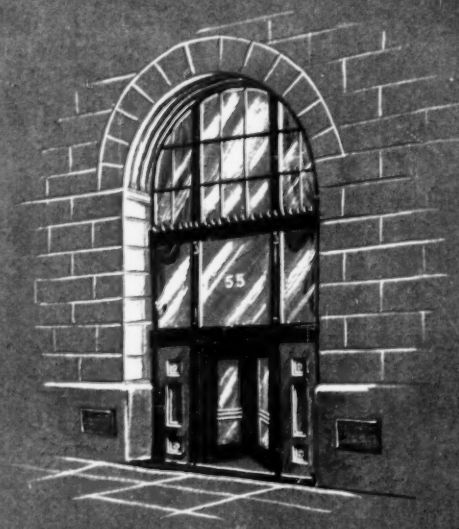
By ALBERT G. KLOCK
Bigelow-Sanford Carpet Co.

STATISTICAL quality control is usually applied to dimensional characteristics — those which can be measured. There have been few statistical applications to those characteristics which are principally visual or otherwise subjective, and so do not lend themselves readily to physical measurements. The products of the carpet industry are of this latter type; they are made to dimensional specifications and yet have appearance requirements.

The quality classification of carpets must be related to the thinking of the average customer — the inspection must be conducted with this in mind. According to this principle, visual defects found in carpets have been divided into the following basic classes:

a. Color — uniformity or levelness.

b. Yarn — physical differences



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Mr. Klock

which are visible.

c. Weave — machine difficulties, carelessness in assembling.

d. Finish — feel, handle, backsizing, off-square, dressing up of a poor-appearing fabric.

A numerical rating system was then developed to describe the relative standing of a carpet in each of the basic classes of visual characteristics:

0. Best — perfect; completely free of flaws, exceptionally desirable.

1. Good — contains a few minor flaws which are not readily detectable and will not affect or harm the usefulness of the carpet. Still a very desirable product.

2. Satisfactory — readily detectable flaws of a minor nature, no damage to the end use, satisfactory service could be expected.

3. Chance — readily detectable flaws of a minor nature, and even a major defect that the average customer might not accept.

4. Inferior — contains major defects which cannot be repaired; it must be rejected, since no customer will accept it.

To assist the inspector, guides have been prepared in chart form, listing all possible physical defects in each of the basic classifications. Daily reports are made, which are summarized at regular intervals so that trends may be detected and trouble areas corrected. Inspection is made by a random sampling plan to give a good cross section of the products.

Tests were conducted to determine reproducibility of results by the same inspector, between inspectors, and between day and night inspections. The following table summarizes results:

	Reproducibility of Results		
	Same Inspector	Between Inspectors	Day-Night
Color	Consistent	Consistent	Significant Difference
Yarn	Consistent	Consistent	Consistent
Weave	Consistent	Significant Difference	Significant Difference
Finish	Consistent	Consistent	Significant Difference

The variation between inspectors in classifying defects in the weave category was corrected by better definitions of visual defects in that classification. The differences found between day and night inspections points out the need for the standardization of lighting conditions under which inspection of carpets is made.

Bigelow-Sanford's visual inspection plan has had the following benefits:

1. Serves as an audit on production employees and other inspectors when used as a check inspection on production inspectors.

2. A single index of quality, or quality level, is obtained for each division or basic operation.

3. Comparable indexes are developed for each individual grade, and thus quality levels and standards can be developed for grades.

4. Ties in functional manufacturing departments quality- wise with the end product.

5. Keeps top management informed of the quality of outgoing products.

6. Records assist in the efficient handling of claims.

7. Improved consistency of inspection results.

8. Reduced time required to train inspectors (some have been trained in three weeks).

9. A yardstick by which to measure competitors' goods.

More Cotton Wearing Apparel in 1952

A near-record total of 3,108,080 bales of cotton went into men's, women's, and children's wearing apparel items last year, according to the revised edition of the National Cotton Council's statistical handbook, "Cotton Counts Its Customers."

Preliminary figures for 1952 show impressive gains over the previous year in these uses. In women's, misses' and junior misses' wearing apparel, 734,770 bales were consumed last year as compared with 677,000 bales in 1951. Especially note-worthy increases were listed for dresses, sportswear, foundation garments, and blouses. In menswear, shirts and trousers, notably sport and work types, scored a 60,000 bale gain over last year, accounting for nearly a million bales altogether.

The Cotton Council survey, which estimated over-all domestic mill consumption for 1952 at 9.2 million bales, reported that sheets remain as the biggest single end use product of cotton. A total of 522,610 bales went into sheets last year.

Other major uses: drapery, slip cover, and upholstery fabrics, 425,000 bales as compared with 441,000 bales the preceding year; curtains 92,000 bales against 89,400 in 1951; rugs and carpets 247,600 compared with 214,000 in 1951; automobile uses, 460,400 compared with 878,300 in 1951. The sharp drop in this latter use was attributed to the decline in the use of cotton cord in the manufacture of tires. Similarly there was a falling off in consumption in bags, from 355,300 in 1951 to 319,100 last year. The unprecedented decline in the price of burlap was reported to have caused this decrease.

New Carolinas Section. At a business meeting preceding the technical sessions, the Carolinas Section of the American Society for Quality Control was formally recognized. Officers of the new section, elected at a meeting at Clemson, S. C., in April, when the Textile Quality Control Association voted to merge with the A.S.Q.C., were confirmed.

The following Carolinas Section committee chairmen were elected: program F. H. Martin, The Springs Cotton Mills, Fort Mill, S. C.; arrangements, Duke Kimbrell, Parkdale Mills, Gastonia, N. C.; membership, Clyde Moss, Firestone Textiles, Gastonia, N. C.; education, Dame S. Hamby, N. C. State College, Raleigh, N. C.; publicity, G. Dent Mangum, Jr., National Cotton Council, Washington, D. C.; auditor, Elvin Bond, U. S. Rubber Co., Winnsboro, S. C.; and relations with other technical societies, R. H. Souther, Cone Mills, Greensboro, N. C.

The next meeting of the Carolinas Section will be held on October 9, 1953, at N. C. State College, Raleigh, N. C.

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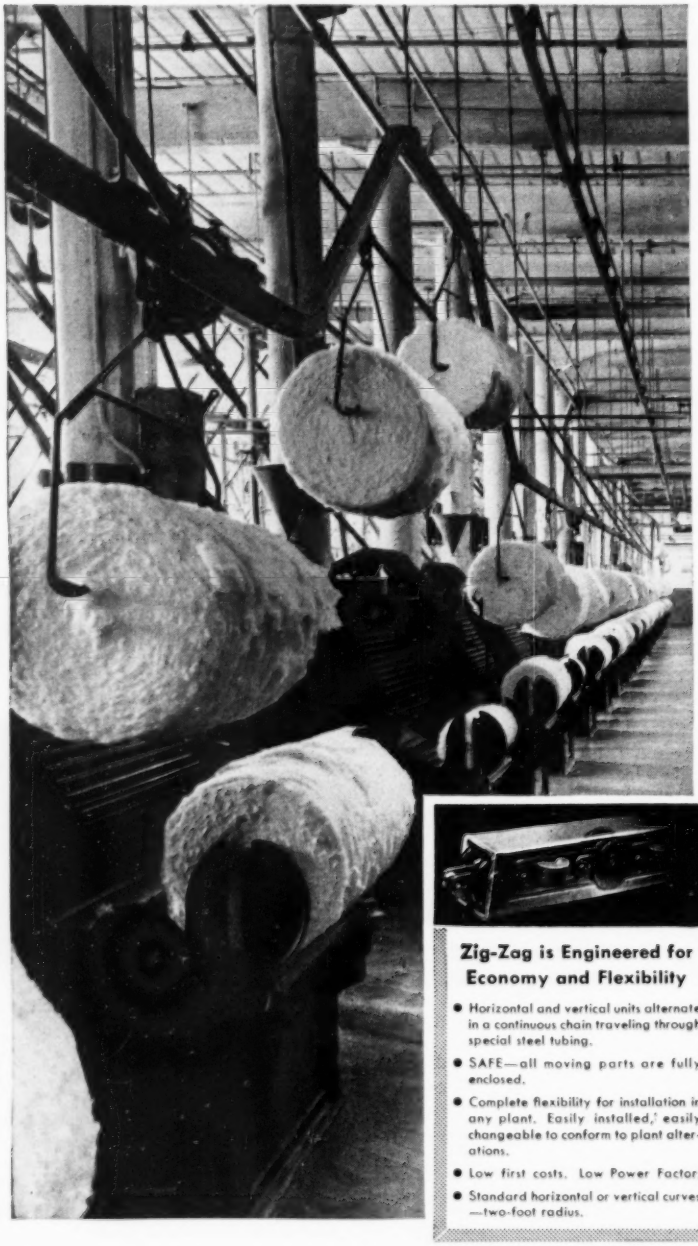

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The Cartels vs. Public Interest

By RINGGOLD ARDEN
EXCLUSIVE

IN A GREAT many countries from time immemorial, business men of all sorts have associated themselves into monopolistic groups for the purpose of stifling competition and keeping prices at a comfortably profitable level. These groups, or associations, have recently been referred to as cartels. They completely ignore the public interest in favor of the private interests of those who manipulate the monopoly. The stockholders in the companies forming the cartel flourish mightily, but the general public pays through the nose for their prosperity.

The function of these cartels is performed in the United States by our labor unions.

The people of this country have always taken a dim view of industrial or corporate monopoly, but for some weird and inscrutable reason, our government, and enough of our people to permit the practice to continue, have looked tolerantly, or with outright approval, upon the monopolistic practices of the labor unions, which are identical to the monopolistic practices of the industrial cartels, and accomplish the same purpose of stifling competition and keeping prices high for the benefit of a relatively small group of persons who control the monopoly. These monopolies ignore the public interest in the same manner that the European cartels have ignored it.

The American public has lost another round in such fight as it is putting up against the impositions of these labor rackets. The steel workers' union, which maintains an absolute and ironclad monopoly control of the steel industry, and without whose consent not a pound of steel can be produced, came up with another demand for the American people to chip in to raise their wages and got it.* There is no reason that we can think of why steel workers should feel that they have an inalienable right to demand about 25 per cent higher wages than the average for all industrial workers, except the good, dependable argument that they can hold an economic pistol at the heads of the rest of the people in the country and pretty well get what they want.

We can think of no good reason why a man working in a steel mill is automatically entitled to about 50 per cent more wages than a man working in a textile mill to make clothing for the steel worker, or a man working in a meat packing plant or a flour mill to provide food for him. Government statistics show that the cost of living has not advanced, and has perhaps gone down slightly, but the people who control the labor monopolies are not concerned with this in making demands for increased wage payments which the rest of the American public must dig down into their pockets to supply.

When the cost of living does go up, of course the labor unions avidly use this as an excuse for demanding something more. If the cost of living goes down, these same inveterate demanders skip that argument and think of something else.

Labor unionism, as typically operated in the United States, is simply a legalized form of banditry. No less an authority than the august Supreme Court of the United States has pointed out that labor unions do practice banditry but that it has been sanctioned by law. In one case the Court recognized that the union practiced highway robbery, beyond any question of doubt, but declared that the practice was legalized by some Act of Congress.

This case was nothing unusual, and the same sort of thing in various forms appears in practically all labor unions. A good deal of the same sort of banditry has been unearthed in the investigation of waterfront scandals in New York. Boston, Philadelphia, San Francisco, or any other large port city, could furnish much the same sordid story of corruption. New York waterfront conditions have been no secret in New York for many years.

The old-fashioned bandit very commonly held his victims for ransom. It was a common practice to seize a man and keep him in prison until his family, associates or subjects, depending on his rank, dug up a stated ransom. In China, the kidnapping bandits had a pretty well-established scale of values for different types of persons. The bandit bagged his victim and made his demand, and if the money was not forthcoming after the first demand, he might send an ear or a finger or a foot along with the subsequent demands.

The modern bandit, known as a labor leader, is temporarily restrained from personal kidnapping, although as things are developing

*A wage hike of 8½ cents an hour; elimination of a 5-cent hourly wage differential between higher paid operatives in the northern states and those in the South; joint study by corporation and union of insurance and pensions—all were agreed to by pace-setting United States Steel Corp. on June 12.

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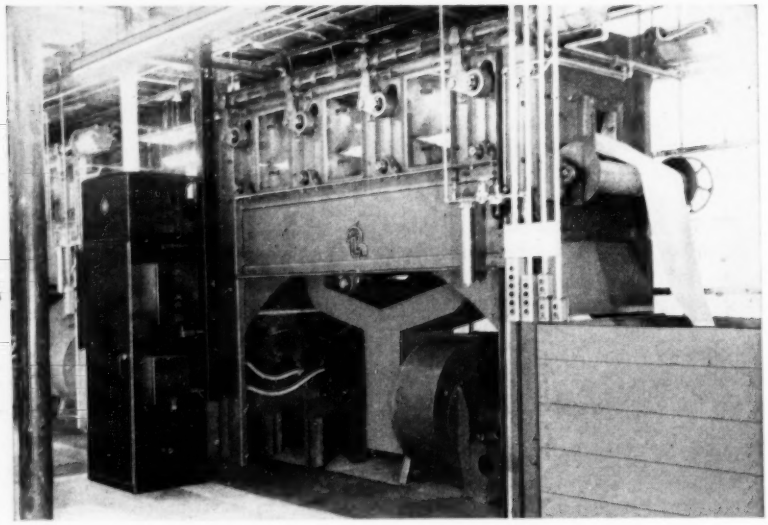

Model CCT-4 (shown here) is dual-unit continuous crusher of 2 units in tandem

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NOTE: This completely redesigned and modernized Continuous Crusher makes possible one single continuous operation of acid soaking, drying, baking and crushing. Continuous neutralizing machine is also available to run in tandem with it if desired.

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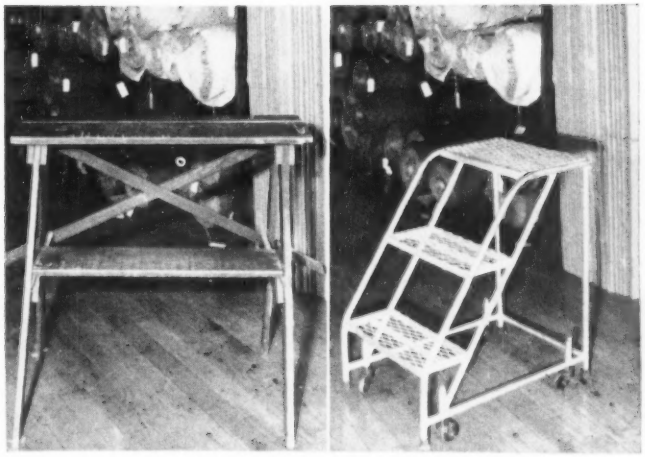
this will probably come before long. Meanwhile, he has held people's property for ransom. The property was not only held until the ransom was paid, but in lieu of a stray ear, eye or finger, the property has been seriously damaged piecemeal to remind the unhappy owner that he was dealing with people of vigor and decision, who would not hesitate to take such steps as they deemed appropriate for shaking him down.

In the "Count of Monte Cristo," there is an interesting story about how a Roman bandit kidnapped a wealthy Parisian banker, and while offering the rich man no personal violence whatever, simply refused to feed him or give him anything to drink until the pangs of hunger led the banker to inquire about food, and meals were quoted at one million francs per meal. The banker was, of course, in a few weeks reduced to beggary. The modern bandits simply starve a business until the owner is forced to pay the ransom money to keep it from dying on the vine.

In many historical works there are endless stories of people being tortured and mutilated to force them to part with their belongings. A refinement was frequently introduced in the form of kidnapping a man's family. If he was recalcitrant about his payment to the bandits, a strangled baby left on his doorstep served as a poignant reminder of his helplessness. The modern bandit, being restrained by law and public opinion from kidnapping his employer's family or himself, but being encouraged by the law to hold his property for ransom, depends upon the strangulation of the business and the depreciation of the property to bring the rebellious owner, or owners, to terms.

For many years, Mr. John L. Lewis used to turn up regularly with the statement that his miners were hungry. Since these miners are now among the highest paid industrial workers in America, their hunger must be for more loot from their fellow workers, because if they spend their money for the same sort of edibles that other working people have to buy, they could be among the best fed



Safety Ladders

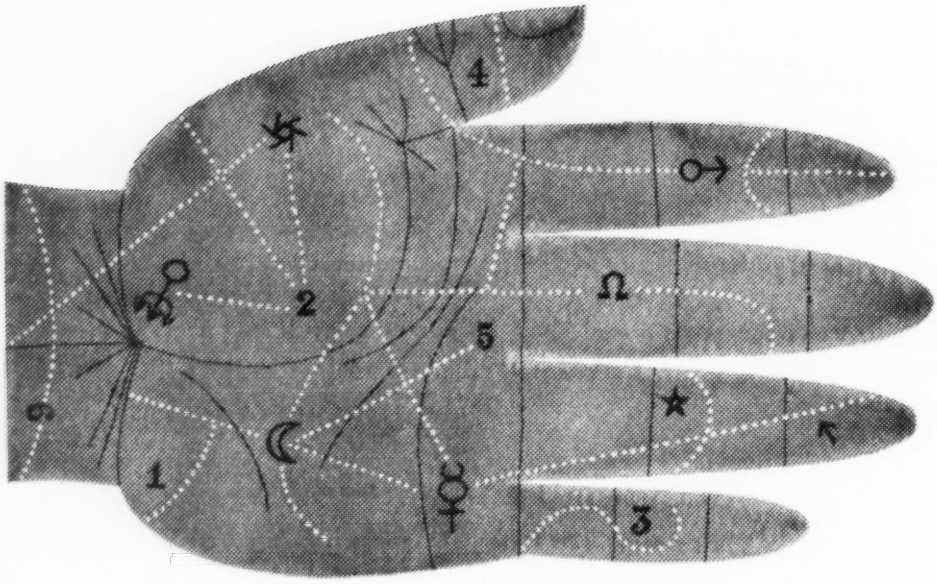
Formerly the shipping department personnel at Elberton Mills had a four-foot step ladder which had to be moved from place to place as needed to reach stock on the shelves. The ladder was cumbersome and difficult to move about, and the nails had worked loose, causing the ladder to be wobbly. The maintenance department continually had to repair the ladder.

A steel ladder was made in the mill shop and mounted on casters. The casters are mounted on springs which support the ladder, but the springs are not strong enough to support a man's weight. The ladder was put in the shipping department where it is rolled about as needed. When someone stands on the ladder, the rubber-tipped legs touch the floor, providing a good non-slip foundation. This ladder requires no repairs and is much safer and convenient than the old wooden ladder (see photos above).

Increased Unit Sale Aim of Boy's Sock Package

Packaging four pairs of assorted boy's socks in a cellophane overwrapped Tripl-Tite Tray is increasing unit sales approximately 40%. This is the opinion of Rudin & Roth, exclusive sales agents for Clayson Knitting Company of Star, N. C. The package was designed and manufactured for Rudin & Roth by Standard Folding Trays Corp., to accommodate four pairs of boy's socks, compactly nested to reveal the colors and size.

A triple-thick-end and double-reinforced-bottom process is utilized in manufacturing the trays to assure uninterrupted high speed production in the cellophane overwrapping machine. Due to the tray's strength, a neat tight overwrap with the maximum eye appeal is obtained. Filling orders and shipping is a comparatively simple matter, for the danger of soiling or breaking packages is practically eliminated. Trays come flat and can be assembled by hand at wrapping machine speeds.



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Latest instance of acetate's vitality (and of Celanese leadership) is the acetate yarn called Celaperm*. Blessed with all of acetate's virtues, this remarkable yarn has superb *colorfast* qualities.

Unlike ordinary yarns, Celaperm yarn is color-pigmented. The color is literally *sealed-in* before the yarn is spun.

How important is Celaperm? Ask your wife. Your secretary. Or, for that matter, yourself. Ask anyone who has ever bought one color and ended up with another.

Ask, too, the makers and merchants who at last are able to promote "color for keeps" in such ways as these: Bathing suit color that can't be lost at sea. Draperies, curtains and bedroom ensembles whose beauty doesn't fade away. Sport shirt shades that perspiration won't mar. Washable children's dresses whose color won't go down the drain.

The facts are proven by extensive (and expensive) testing. No normal color hazard—gas, washing, cleaning, perspiration, crocking—dims the beauty of Celaperm. This amazing acetate yarn even resists sun-fading. And because fashion feeds on new ideas, Celanese is exploring with mills and manufacturers the new style effects Celaperm makes possible.

Celaperm will color the future. That is why it even now colors the thinking of all alert textile men.

*Reg. U.S. Pat. Off.

CELAPERM* the Celanese® acetate yarn with the "sealed-in" color

workmen in the country.

Many years ago the labor leaders began developing the thesis that all wage increases are paid out of the pockets of bloated plutocrats, or from the bulging coffers of overly profitable corporations. Just why the American public ever swallowed this silly nonsense is hard to understand, except on the grounds that the public has probably never closely studied Dun & Bradstreet's reports on failures, nor has the public paid too much attention to the annual earnings of American corporations. The truth of the matter is today, as it has always been, that wage payments are made out of selling prices, and that selling prices are regulated by competition. The labor cartels have firmly insisted that wages must not, however, be regulated by competition.

This policy results in the more powerful rackets getting the gravy and the rest of the people paying for it. When a textile mill operative wants to buy an automobile or a refrigerator or a new hoe for the garden, he is helping to pay out of his lesser wages for the inflated wages of the steel workers. When any group of persons possesses the power to name its own incomes, it will not be niggardly. The purpose of any monopoly is to enable people to name their own incomes within the limits of the traffic to bear what they demand.

Some of these labor rackets are now incredibly powerful. During a strike last year, an official of the union was reported to have said that there was no power in the United States, including the Government of this country, that could keep the union members from getting what they were asking for. The coal miners likewise can at any time hold the entire nation for ransom to satisfy their demands, and they do not have to justify any demands; they simply have to make them and freeze and starve the American people into submission to those demands.

A recent newspaper clipping is typical of hundreds or thousands that appear during the year. It stated that a 65-day-old strike at a company manufacturing jet engines was ended. In such a strike, the labor rackets were not merely holding a plant for ransom, but were striking directly at the public interest, because there is nothing that our defense effort needs worse than airplanes with jet engines in them. The needs of banditry, however, seem to be superior to the needs of common citizens, or of the government.

As one bandit chief conducts a successful foray against the public interest and the pocketbooks of the masses of the people, another one is heartened to make his own incursions, and there is no limit except that imposed by the strength of the organization making the demands. The people seem to be helpless—or remarkably indifferent to impositions on their rights and their incomes.

Bold Use of Color on Machines Saves Lives at Star Woolen

Color scheming that might make a home decorator shudder is saving lives at the Star Woolen Company at Cohoes, N. Y. Richard Levi, company treasurer, reports. Bold use of orange, blue, yellow, gray and black have played an integral part in a safety drive which has reduced the accident frequency rate by 76 per cent in six years.

"This reduction is particularly outstanding in the garnetting industry," Mr. Levi said, "because this industry has one of the highest accident frequency rates in the entire textile field." The long range safety program has incorporated the use of color by having each color—including an alert orange and a precaution blue—designate a specific danger.

On garnetting machines, for example, the use of color paints reduced considerably the number of accidental injuries. The color scheme included the use of horizon gray on the outside of machine frames. Alert orange was painted on all moving parts, such as gears, sprockets and pulleys. Precaution blue, applied to such areas as roll covers, arches and locations near moving machinery, signaled workers to approach with care. Yellow, a highly visible color, was used on all guards, the insides of all garnet frames, and the ends of moving cylinders, while an additional precaution was taken by painting a black stripe across the ends of moving rolls.

The use of color in the safety program was carried even further by painting upright beams and other parts of plant interior in highly visible shades.

It's Not Too Late!

(Continued from page 141)

have character and intelligence and qualities of leadership, to make your influence felt in the right direction.

As I emphasized before, it is as easy for a nation—as for an individual—to surrender to the placid sweetness of death. It takes courage and strength for a nation to live.

We must fight for our American Way of Life. But dollars and bullets are not enough. If we pin our hopes on these alone, we are doomed to fail. We must have spiritual rearmament as well. On our people has fallen a responsibility, greater than that of any other people; you and I, loyal custodians of our precious heritage, have our part to perform.

Let us acknowledge and be grateful for the blessings of freedom which God has given us.

Let us, therefore, pray every night for the strength and guidance to inspire in others the gratitude, the obligations, and the responsibilities that we owe to this great land of ours for the sake of future generations—our boys and girls—our Leaders of Tomorrow. Then, and then only, can we say when the candle of life burns low, "Thank God I have contributed my best to the land that contributed so much to me."

Production Tips for Wool Carders

Current topics of interest among wool carders gleaned from discussions and proceedings of the Carders Guild during the 70th semi-annual convention of the National Association of Woolen and Worsted Overseers.

Staff Report

Simple Way to Determine When Peralta Rolls Need Grinding

Rub hand quickly across surface of roll to detect ridges or circumferential grooves caused by sand, abrasives, and other harsh matter in grease wools. For finding exact degree of wear, use roll calipers with 1/10,000th graduations. For estimating the degree of wear of the crown, apply 3,000 pounds pressure on each bearing, clean both top and bottom rolls thoroughly, and pass strong light behind the rolls at the nip. If you see irregularities at the nip, rolls need grinding.

Quick and Even Control of Roving Weights

Davis & Furber's variable speed condenser drive has proved to be a real asset to carders. It's permitting them to control weights evenly and quickly without going back to the feed box. Controlling weights at the finisher doffer definitely has improved over-all weight uniformity.

Raise Carpet Stock Output with Double Eccentric Condenser

150,000 pounds of carpet stock have been run through 78¾" cards equipped with double eccentric condensers. Results are eye-opening. On 1¼ run work, actual production was 216 pounds per hour. On 1⅛ run, 245 grain roving, production equalled 270 pounds per hour. On a 50-50 rayon and BA 6's stock, 1⅛ run, output was 273 pounds per hour. On all tests, dyed stock and white stock, output averaged 237 pounds per hour with 92% yield. Fly was insignificant.

Clean Dirt and Glaze from Rubber Condenser Aprons

Do not use solvents. Washing with product similar to Oakite is recommended. One mill uses the same formula its hosiery fulling specifies. Good results are reported using wool oil sprayed over the aprons. The first spools are run off as waste.

More Tension Needed for Winding Clothing

Automatic vacuum strippers may cause damages to card clothing if it isn't wound sufficiently tight. 400 pounds tension is recommended for rewinding.

Match Tapes When Replacing

When a tape breaks, don't replace it with a new one. Match it with an old tape. Tapes already on the card have been stretched and narrowed by prolonged usage. A new full size tape will tend to rob the web. Variations in tension will result in non-uniform roving weights. The set of tapes should be replaced at least every six months. They've earned their keep running 3 shifts for that period.

Rationalize Card Room Practices with Good Record Keeping

Carders should keep a log book for each card. Some important entries are: description of mixes or lots, production of each, yields, waste, special settings or speeds required, unusual occurrences. Also, data on belting, when installed, maintenance. Same with clothing, grinding, Peralta service, lubrication, stripping, special repairs. Note dates of any servicing.

Improved Cards Are Making New Production Records

Changes in cards made during the last few years have enabled carders to increase efficiency 30 per cent and higher. New wire, breasts, studs, stripping, exhaust covers on fancies, synchronized drive, bearings, dimensions, and tape and condenser materials especially have contributed to new, high peak performance. One mill once ran twelve 4-cylinder cards and picked 50,000 pounds. This same mill is now running fifteen 3-cylinder cards and picking 90,000 pounds, with hardly a man needed in the alleyway.

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Textile School Graduates Enter Industry

AGAIN THIS YEAR the textile schools of the United States and Canada have provided TEXTILE INDUSTRIES with the names and employers (where known) of their recent graduates.

If a firm name does not appear immediately after the graduate's name, he either had not decided about his employment at the time the information was compiled by the school or he contemplated going into one of the armed forces.

We extend our congratulations to these men and women who have chosen the textile and associated industries for their life's work. We wish them all much success and happiness.—The Editors.

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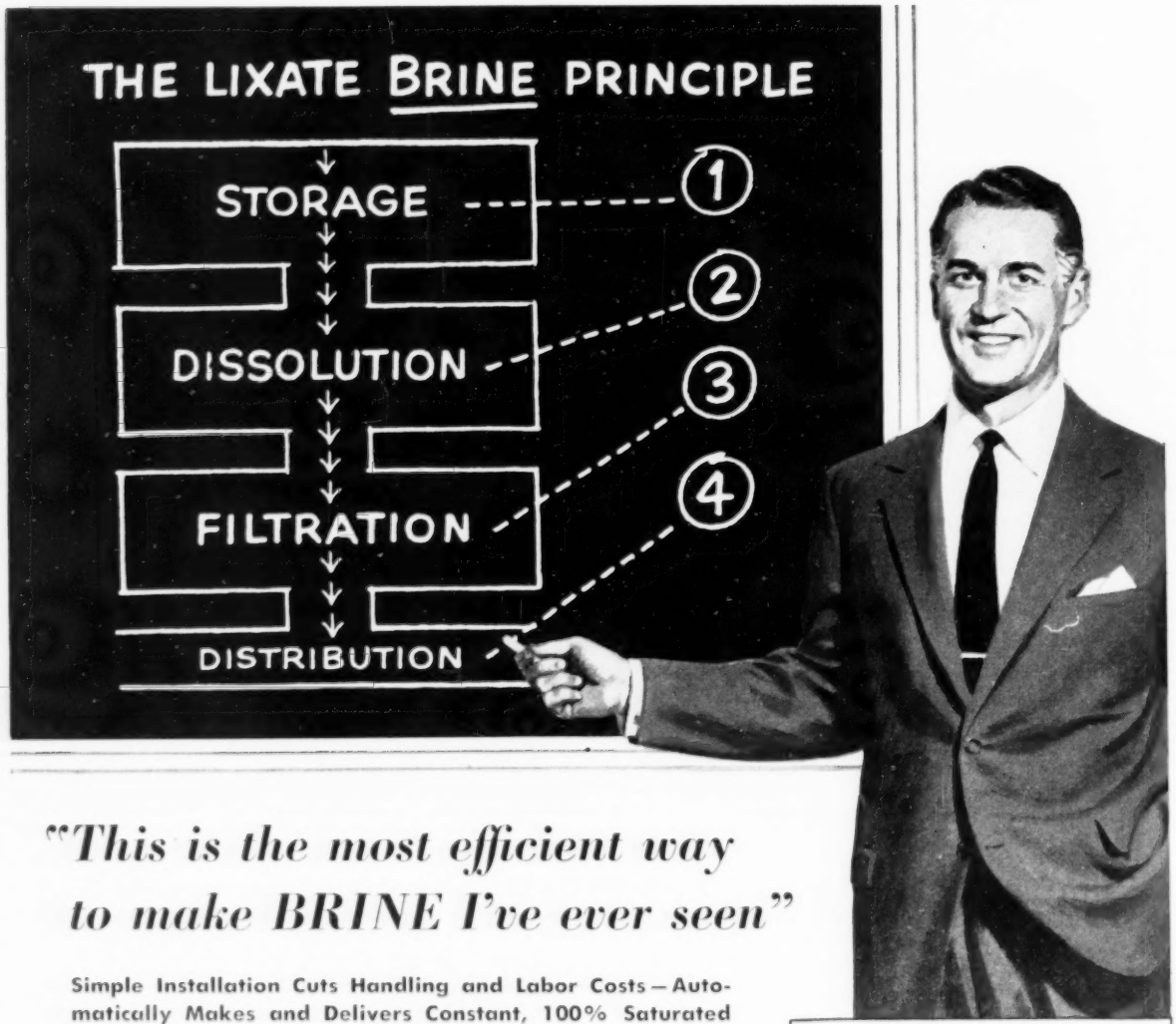

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(Continued on page 167)

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(Continued on page 169)

A Lockwood Greene Project

Large new textile finishing plant near Mexico City for Acabados, Mexico, S. A.

A RECORD OF SERVICE IN FINISHING PLANTS as measured by:

New Plants	71
Major Additions	100
Minor Additions, Reports, Appraisals	347
Total Engagements	518
Cost New Plants and Major Additions	$55,000,000

The Mexican plant shown above has complete facilities for bleaching, dyeing and finishing of cotton and rayon textiles. Lockwood Greene were consulting engineers on the entire project and made all machinery and equipment layouts.

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Joseph Babcock
Richard P. Brouillard, American Thread Co.
Leo J. Campbell, Bates Mfg. Co.
Philip D. Carney
George J. Cavicchi
Isac Feinstein
Albert R. Gifford
Luis Medina, General Motors Corp.
Benedict Mooney, Bates Mfg. Co.
Roger O. Parent
Jakob R. Rotenberg
John L. Silva
Clifford R. Willette, James Thompson Co.
Steve Arvanites
Lillian M. Danko, Sidney Blumenthal Co.
Edward J. Dugan
Beverly Gerstein
Eleanor Hill
George LeBlanc
Joan Watson

School of Textiles N. C. State College

A. M. Aksel, Will return to Turkey
Charles Evans Atwell, Burlington Mills Corp.
G. S. Bakoss, Will return to Iraq
Wm. G. Ballard, Military
E. Benites, Will return to Mexico
Wm. E. Berner, Beacon Mfg. Co.
Norman Edward Bobbitt, Dixie Mercerizing Co.
Geo. J. Boltz, Stuart Knitting Co.
D. H. Brafford, Jr., Military
Pressley Bell Brawley, Jr., Military
D. R. Brown, Military
D. L. Butler, Military
John B. Button, Military
Jack W. Burnette, Military
Robt. B. Byrum, Military
Lester Clegg Caudle, Jr., Wiscassett Mills Co.
Joslin J. Chamberlain, Deering, Milliken & Co., Inc. (McCormick Spinning Mill)
Charles Rex Childers, Dixie Mercerizing Co.
W. B. Choate, Piedmont Mop Co.
John Thomas Coble, Robbins Mills
J. Cohen, Military
T. B. Collier, Gayley Mfg. Co.
Ralph Loyd Comer, Military
J. E. Cunningham, Military
Edward Albert Dalmas, Cranston Print Works
B. N. Davis, Military
J. O. Davis, Carbide and Carbon Chem. Div.
A. T. Dickson, Harvard Business School
Wm. (Wayne) Downs, Burlington Mills Corp.

Textile School Graduates

N. C. State College continued

J. R. Duffett, Graduate Work
Paul Foust Fitzgerald, Carbide & Carbon Chemicals Co.
Curtis C. Freeze, Cannon Mills Co.
Clyde M. Garrison, Chemstrand Corp.
Jaime Raul Garza, Algodonera Garza S. A.
Rene Hector Garza, Fibras Del Norte S. A.
M. E. Goldberg
Franklyn Clayton Goode, E. I. du Pont de Nemours & Co.
John Maultsby Grantham, Deering, Milliken & Co., Inc.
Billy Steve Harris, Judson Mills (Deering-Milliken)
Henry Laton Harris, Jr., Harris-Marshall Hosiery Mills
W. C. Harris, Jr., Military
M. A. Harrison, Graduate Work
Roy Harrison Hellyer, Dominion Textiles Ltd.
Robert Winfred Hines, Slater Mfg. Co.
Donald George Hoffman, American Enka Corp.
B. R. Holt, Jr.
J. A. Holt, Military
George Kenneth Hopkins, Pacific Mills, Inc.
Doublas E. Ix, Military
Cornelius Lamb Jackson, Jr., McCormick Spinning Mill, Inc.
Charles Theodore Jackson, American Enka Corp.
G. R. Jacobs, Military
Joseph Clarence Johnson, Rosemary Mfg. Co.
M. Kallman, Military
Burton Marvin Klein, Robbins Mills
D. Koch, Military
Jules Lavner, Robbins Mills
J. H. Lockamy, Jr., Military
Bill Loftin, American & Efird Mills, Inc.
Alan A. Lowe, Greenwood Mills
James Kenneth McArthur, Burlington Mills Corp.
J. B. McAuley, Pacolet Mfg. Co.
B. H. MacSorley, MacSorley Knitting Mills
M. A. Madison, Military
F. H. Mandel, Military
Nicholas A. de Martin, Will return to Cuba
W. L. Miller, Military
S. M. Mintzer, Military
Tom Murphy Moore, Rosemary Mfg. Co.
Sidney Emmett Morrison, Jr., Cramerton Div., Burlington Mills Corp.
J. W. Morton, Dominion Textile Co., Ltd.
W. B. Morton, Military
Roland Eugene Myers, The Dixie Mercerizing Co.
Wm. T. Nance, Russell-Lacey Mfg. Co.
W. B. Nowell, Jr., Robbins Mills
Robert Edward O'Connor, Laurel Mills, Inc.
Jaime Humberto Olarte, Fabrica de Hilados y Tejidos del Hata "Fabricato"
Frank Gus Oravec, Dominion Textile Co. Ltd.
O. J. Palma, Will return to Peru
Charles Benjamin Park, Military
Geo. L. Payet, Military
R. Perez, Research Dept. School of Textiles
C. R. Reed, Military
Donald Jordan Rose, E. I. du Pont de Nemours & Co., Inc.
S. Z. Rowen, Military
A. Rudolph
H. S. Saywitz, Military
Walter Edward Schact, Jr., Fieldcrest Mills

(Continued on page 171)

Need low starting friction and long bearing life?

here's how leading manufacturers of business machines get them with **NEEDLE BEARINGS**

Torrington Needle Bearings are essential design features of many business machines because of their low starting and running friction, their long trouble-free service.

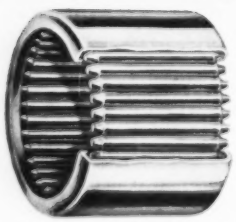
They have been *performance-proved* by years of day-in and day-out service on such machines as electric typewriters, addressing and duplicating machines, accounting machines, rotary card file systems, etc.

On the conveyor rolls, sprockets, gears, tape and feed roll shafts of duplicators, for example, Needle Bearings help reduce power requirements and keep motor size to a minimum. The Needle Bearing's turned-in outer lips effectively retain lubricants to keep these precision machines running for long periods without servicing.

The Torrington Needle Bearing has become "standard equipment" on countless products throughout industry since its introduction nearly twenty years ago. Its small size and infrequent lubrication needs are of great advantage in compact, tightly encased designs.

Perhaps the Needle Bearing can solve your anti-friction problems. Our engineers will be glad to work them out with you.

THE TORRINGTON COMPANY
Torrington, Conn., South Bend 21, Ind.



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Jas. Frederick Scull, N. C. State—Graduate Work
R. P. Shapard, II, Shapard Knitting Mills
P. P. Singh, School of Textiles
C. F. Siri, Will return to San Salvador
Tommy Edw. Sledge, Travora Textiles, Inc.
James P. Smith, Claussner Hosiery Co.
Franklin Mazwell Soling, Robbins Mills, Inc.
Charles Edward Sprain, Hartsville Cotton Mill
R. N. Srivastava, Will return to India
D. H. Strange, Military
Enrique Talamas Talamas, Mezclilla Saltillo, S. A.
W. T. Teague, W. T. Shuford Mills
W. L. Terrill
William Franklin Thore, J. P. Stevens & Co., Inc. (Carter Div.)
G. S. Tompkins, Jr., J. P. Stevens & Co., Inc.
Luis G. Uribe, Fabricato
G. Villa, Will return to Colombia, S. A.
W. T. Walsh, J. P. Stevens & Co., Inc.
Benjamin Thomas Ward, Military
Robert E. Wiggins, Military
D. M. Williams, Dominion Textiles Co. Ltd.
L. A. Williams, Military
Wm. Luther Winecoff, Riegel Textile Corp.
T. M. Woodard, Robbins Mills Corp.
Emilio Yachaan
A. S. Yaltir, Returns to Turkey
N. K. Yankoglu, Will return to Turkey

Philadelphia Textile Institute

Jose Ramon Alvarodiaz
Jerome Ira Barrow, Military
Morris Z. Benzakein
Norton L. Binder, Military
Martin Arnold Berman
Alfredo H. Blohm, Celanese Corporation
Boyce C. Bond, Collins & Aikman Corp.
Enzo J. Bosco, Grace & Co., Valparaiso, Chile
Alfred J. Brandler, F. C. Huyck & Sons
Richard H. Brautigam, Owens-Corning Fiberglas Corp.
Maurice E. Calby, Jr., Collins & Aikman Corp.
Israel Cikvesvili, Military
John G. Connelly, Military
Charles H. Edelson, Military
Augusto G. Encinas, E. I. du Pont de Nemours & Co.
Atalay Eren, Returning to Turkey
Arthur L. Gottily, Celanese Corp.
William H. Gottschall, R. K. Laros Silk Co.
Arthur H. Greenhouse, Military
James E. Hallinan, Collins & Aikman Corp.
Peter G. Hilton, Military
William R. Jamison, Textile Sales, Ontario, Canada
Robert F. Lederer, National Cotton Council
William J. Maher, American Felt Co.
Leon Manevich, Returning to Colombia, S. A.
Martin E. Marks, Military
Rovert V. Miraldi, Military
William G. Neckerman, Jr., Military
Richard L. Quinn, Chemstrand Corp.
Henry H. Ritter, II, Military
Morton S. Rose
Raymond Rosenstein
Robert E. Sarafan
Jordan A. Sherzer, Deering, Milliken & Co., Inc.
Joseph A. Slavinsky, Chemstrand Corp.
Frank W. Smith, Military
Arthur M. Steinberg, Schlosser Textile
Abraham Tarriff
Donald A. Thomas, Bloomsburg Mills
Robert M. Versalie, Military
John Vinicki, Chemstrand Corp.
Richard H. Waite, Deering, Milliken & Co., Inc.
Lewis C. Williams, Raybestos Manhattan Co.
Abraham R. Young, Princeton Knitting Mills
Floyd J. Zanette, Albany Felt Co.
Morton Zive, Chemstrand Corp.
William H. Houkes, E. I. du Pont de Nemours & Co.
Robert Kunik, J. Eisenberg
Julius Pasquariello, Military
Munir Salloum, Returning to Colombia, S. A.
Sheldon Salmon, Military
Alan Steinberg, Military
Marvin Tabak, Deering, Milliken & Co., Inc.
John Tsu, J. Eisenberg
Melvin F. Buckley, Nescopeck Knitting Mills
Robert H. Choquet, Glenshire Mills, Inc.
Harlan R. Edge, Great American Knitting Mills
George F. Jackson, Jr., Carlton Mills, Inc.
Victor P. Martinez
Rene Bequillard, Returning to Managua, Nicaragua
Jacob Conrad Laib, Returning to Amriswil, Switzerland
Abraham Lesavoy, Lisle Mills, Inc.
Louis R. Beck, Millville Mfg. Co.
Thomas F. Broadhurst, Jr., Joseph Bancroft & Sons Co.
Purushottam T. Bhide, Returning to Bombay, India
Edward A. Chwatt, London Terrace Realty Co.
Louis R. Croce, Buffalo Electro-Chem. Co.
David M. Freedman, Princeton Knitting Mills
Barry Goldstein, Military
Earl C. Holton, Millville Mfg. Co.
Oliver Kerr, Oxford Dye Works
Jerome Klein, Aldon Rug Mills
Kenneth Lobb, Crompton-Shenandoah Co.
Albert McLuckie, National Aniline Div., Allied Chemical & Dye Corp.
Robert Olson, Chicopee Mfg. Co.
Richard Protis, Crompton-Shenandoah Co.
Arthur Reich, Princeton Knitting Mills
William Roff, National Aniline Div., Allied Chemical & Dye Corp.
George Saba, R. K. Laros Silk Co.
Ralph Stanziola, Calco Chemical Co.
John Thackrah, E. I. du Pont de Nemours & Co., Inc.
Theodore Vogel, Calco Chemical Co.
Norbert Weinberg, Buffalo Electro-Chemical Co.

The Provincial Institute of Textiles

Fred A. Almas, Glendale Spinning Mills Ltd.
Gerard R. J. Comeau, Dominion Textile Co. Ltd.
Joseph L. Ivanski, York Knitting Mills Ltd.
Eric C. Laffoley, Textile Sales Limited
Jonathan Leat, Spinners' Limited
Brian A. Marshall
Raymond McCabe, Canadian Cottons Ltd.
Walter H. Muller, Canadian Cottons Ltd.
William Salton, Guaranty Silk Dyeing & Finishing
D. Barry Saunders, Eaton Knitting Co. Ltd.
Allan W. Smith, Canadian Chemical & Cellulose Co. Ltd.
Leonard G. Snell, W. J. Westaway Co. Ltd.
Kent Suzuki, Zimmerknit Division, York Knitting Mills Ltd.
Earl I. Thacker, Eaton Knitting Co. Ltd.
Douglas C. Wigle, Canadian Cottons Ltd.

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Gerald W. White, Chemstrand Corp.
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Corn, wheat and other grain products for industry since 1898

3-2

HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editor "Textile Industries," 806 Peachtree St., N. E., Atlanta, Ga.

Two Plans for Blending Lower Grades of Cotton

EDITOR TEXTILE INDUSTRIES:

Our government has lowered cotton standards and has brought an additional hardship upon our mills. This means that to run the same grade cotton as we did formerly, we must pay for one grade higher and not get anything for the extra money. The change in cotton standards brings forth additional problems in blending. Blending cotton has its faults with its good qualities.

For example, if our mill is on 1 1/16" Good Middling cotton, we may have three letters to designate the components of the mix. We use (A) for top grade in the mix, (B) for light tinge, and (C) for the off-grade stock. (C) will be off in color and have more leaf and trash content. We have room for 50-bale mix, somewhat as follows: 25 bales of (A), 20 bales of (B), and 5 bales of (C) grade. The bales are put together and called a blend.

Such a procedure amounts to just plain cheating yourself. 25 good bales of cotton were diluted by adding 25 bales of lower grade cotton. The 5 bales of off-color and trashy cotton made the mix a grade lower than the 20 bales of (B) grade. The 5 bales of (C) cotton may be run without cutting (A) and (B) grade too much, but they will still be in the blend.

The procedure may be as follows: Open the cotton in 50 to 100 bale lots; bales marked (A), (B), and (C). 50 bales would be mixed somewhat as follows: 25 (A), 20 (B), and 5 (C). If we open 100 bales the mix would be 50 (A), 40 (B), 10 (C). To avoid too much dilution of the (A) and (B) cotton we do not put the 5 bales of (C) into the mix. However, the mill bought this (C) cotton and it has to be used. Yes, but don't ruin 45 or 90 bales by adding 10 poor bales. That doesn't do the trick

One way to do it is to run the 5 bales through opening and picking by themselves. Put in laps and mark them. Have cards marked to run these laps with the doffer speed cut from 2 to 4 turns, and run sliver from these cards on breaker drawing. If 6 ends up, run a ratio of 1 to 5; if 12 ends up, 2 to 10; and if 16 ends, just run 2 to 14. By doing this you still cut the grade some but not so bad.

If we don't want to slow the doffers we can try plan No. 2. Run the 5 bales separately as before. Run in laps as before, and send laps back to opening and run in only one feeder. By doing this (A) and (B) are reduced in grade some, but not so much. By running separately, the opening and picking equipment can do a better job of cleaning the low grade stock. Running this cotton through the second time won't hurt it. You can save your card back and front waste, and all drawing waste, and

KINK CONTEST!

$100 will be awarded the winner.

Send your entry now!

This contest ends November 15, 1953.

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

► All contributions must be postmarked not later than midnight, November 15, 1953.

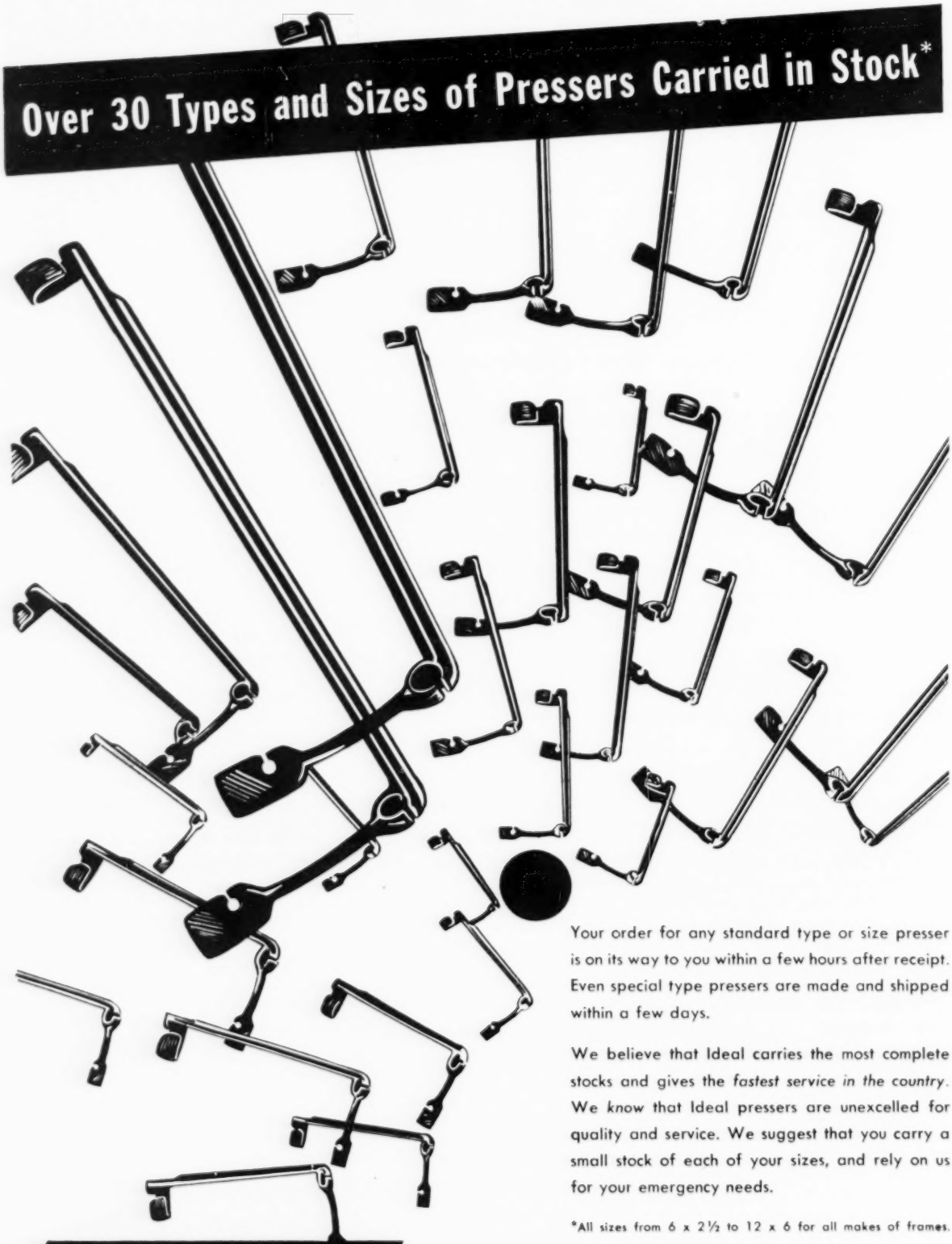
► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance—no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously.

Send your contest entry to: Editor TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 5, Georgia.

Over 30 Types and Sizes of Pressers Carried in Stock*



Your order for any standard type or size presser is on its way to you within a few hours after receipt. Even special type pressers are made and shipped within a few days.

We believe that Ideal carries the most complete stocks and gives the *fastest service in the country*. We know that Ideal pressers are unexcelled for quality and service. We suggest that you carry a small stock of each of your sizes, and rely on us for your emergency needs.

*All sizes from 6 x 2½ to 12 x 6 for all makes of frames.

Ideal Machine Shops, Inc.

Bessemer City, N. C.

29th Year of Continuous Service to Textile Mills

run this waste in the feeder *with* the laps on the second trip through. In view of the fact that the waste has been through pickers and cards it will improve color and will mix well. Following one or both of the proposed plans helps appearance of the yarn and cloth.

CONTRIBUTOR No. 8539

Method of Installing Press Rolls on Older Model Looms

This item was submitted in a kink contest.

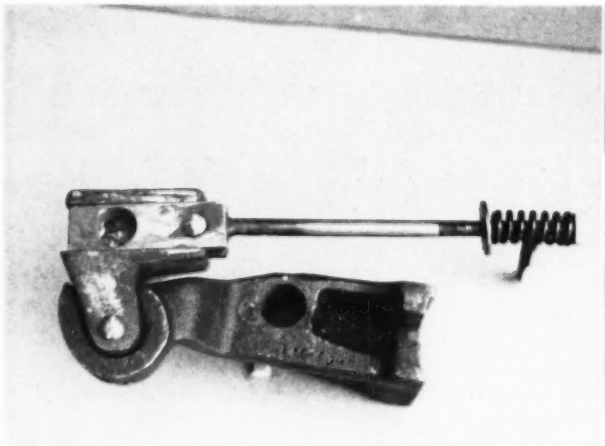
EDITOR TEXTILE INDUSTRIES:

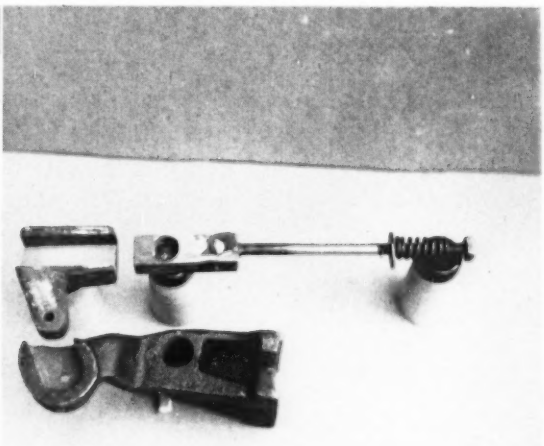
We are employing press rolls on old Model D Draper looms. This kink may also be used on Model E looms. We use it for running heavy styles with heavy pick and sley. This arrangement holds cloth from slipping and makes the beat up easier on the selvages. Since the assembly was placed on our looms, we have been able to increase production on heavy goods and decrease the amount of seconds.

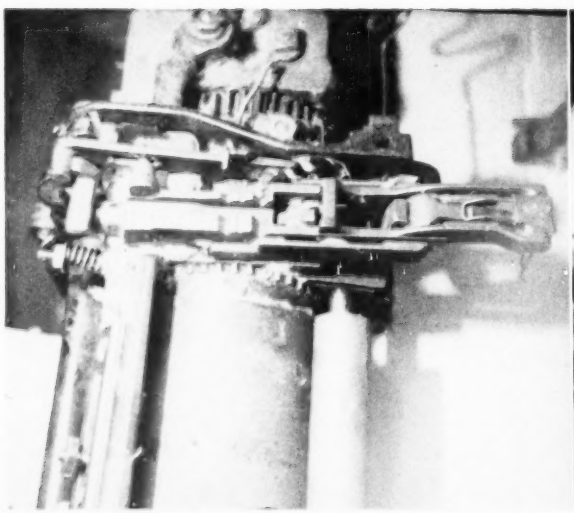
To install the spring assembly shown in the accompanying illustration, the rod back of the sand roll must be removed and a ¼" hole bored in the end of the sand roll arbor bracket (or bearing). Another ¼" hole must be bored in the end of the breast plate at center so the ¼" rod on the slide assembly will clear the end of the sand roll.

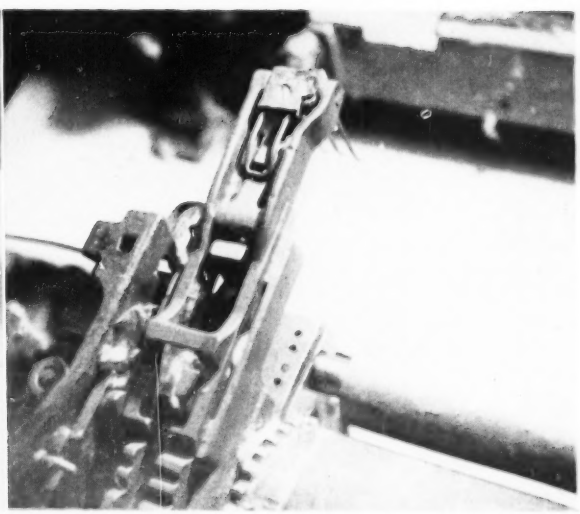
The accompanying illustrations show the spring tightened and the press roll pulled close to sand roll and with spring loosened and press roll moved away from the sand roll. The small holes in top of the slide bracket are for oil and air. The slide brackets were first made of wood and then cast. The other parts can be made in the mill shop. The slide bracket has to be made right and left hand.

CONTRIBUTOR No. 8602









Automatic Winders for Rewound Filling

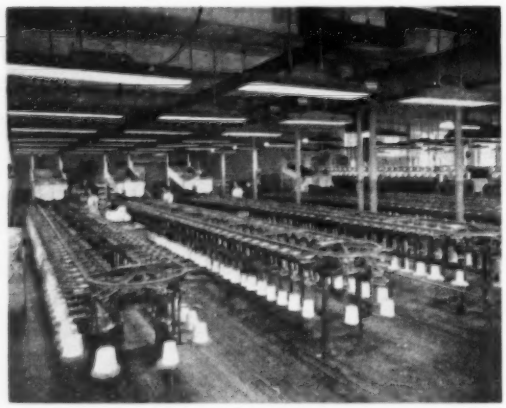
to take advantage of large package spinning, more yarn on filling bobbins, more uniform bunches, better weaving bobbins, and inspected yarn, all of which go to make a better fabric.

Abbott Traveling Spindle Package Winders

Automatic Cone or Tube Winders for warping, dyeing, twisting, quilling, sales.

Can be equipped with any one of a variety of slub catchers and inspection devices.

Production up to 1000 bobbins per hour per operator.

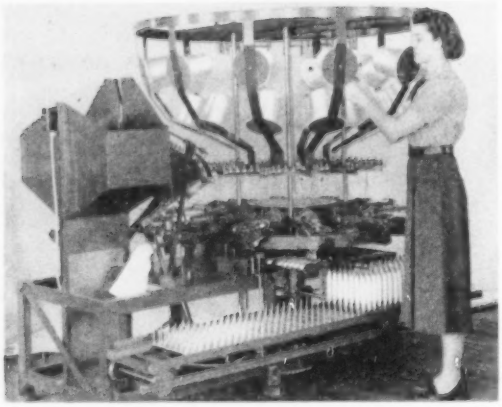


Abbott Traveling Spindle Automatic Quillers

For winding cotton, spun rayon, worsted, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

For rewinding woolen yarn from mule and ring frames. For winding filament rayon and nylon, etc., with automatic pinboard attachment or wide belt inspection conveyor.

Production up to 2000 bobbins per hour per operator.



Abbott Fully Automatic Radial Quiller

For smaller lots and widely diversified mills.

For winding cotton, spun rayon, filament rayon, worsted, wool, etc.

Can be arranged to deliver bobbins to Pinboard Attachment, or into baskets, or onto wide belt conveyor.

One operator can run several machines producing up to 2000 bobbins per hour per operator.

Can be equipped with measured yardage device for two-shuttle looms.

ABBOTT MACHINE CO., INC.

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Measures to Stop Ends Running Over or Under on 10 x 5¼ Roving Frames

Question Briefed: *We have some new 10 x 5¼ roving frames that give trouble when ends run over or under; that is, when the rail changes direction, ends fall over the top or under the bottom. This condition is worse when the bobbin has become three-fourths full. Our range of roving is from .80 to 2.25 hk. Details for the 2.25 hk roving are as follows:*

950 rpm spindle speed
55 grain sliver in creel
1.31 twist multiplier
14 coils per inch

English type builder

We should appreciate any help your readers may offer. (CONTRIBUTOR No. 8533, *May*, 1953.)

EDITOR TEXTILE INDUSTRIES:

CONTRIBUTOR No. 8533 appears to have a satisfactory layout, but the machines should not be geared as they are with the English builder motion. Apparently there is too much dwell at the change. This may be caused by back-lash in the lifter shaft and gears. If there is no back-lash, change the gear on end of top cone to speed the change when the spring brings the contact dog past the builder block.

Poorly set bobbin and spindle gears, bad shafts on either of these, bad spindle steps, or inadequate lubrication may cause a small hop in the bobbin or spindle. If the back-lash is checked and the machine is set to complete the change faster, and if the machine is properly lubricated, a large part of the trouble should be alleviated.

CONTRIBUTOR No. 8584

Have Trouble Weaving Sateen?

EDITOR TEXTILE INDUSTRIES:

I have a problem in weaving as follows: In setting up the loom for weaving any type of fabric that requires a dobby, I have trouble in putting in place in the lower part of the harness a quantity of large springs which exert a heavy force on the harness straps and dobby. Consequently, the heddles have no play.

The opening of the shed is much higher (more than ⅛") than the shuttle race. In a typical instance on sateen with five harnesses to operate four up and one down, it was necessary to operate one up and four down.

I have looked for information in such books as "Cotton Loom Fixers' Manual," and "Negative Dobby Shedding Motions," but have found nothing to remedy the difficulty.

The looms are Draper X-2 equipped with C&K dobbies and 16 harnesses. Your readers may have had similar experience, and I should appreciate any information made available to me.

CONTRIBUTOR No. 8581

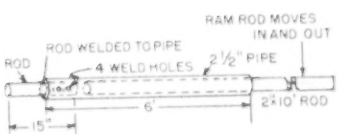
EDITOR TEXTILE INDUSTRIES:

I have noted the difficulty experienced by CONTRIBUTOR No. 8581 in placing the harness pull down springs and also the trouble with heddles not sliding properly on the heddle bars. It is difficult to determine the cause of this trouble without examining the loom; however, the pull down springs may

"Pile Driver" for Weavers

EDITOR TEXTILE INDUSTRIES:

I made a "pile driver" for use in close places where hammer and drift cannot be used. This device is useful in weave rooms to knock off head gears and for other similar jobs. The tool has been used in our mill for six years, gives good service, and saves time and labor. The accompanying sketch shows construction details of the tool which is easy to make. The hollow pipe serves as a sleeve to guide the ram rod. To operate, simply pull the ram rod back about four feet and push it in quickly. When the ram rod hits the bottom in the pipe, considerable force is applied to the object in contact with the drift in the end of the pipe.



CONTRIBUTOR No. 8552

be connected to the harness bar with a strap, and the strap in turn may be getting in the way of the heddles. The proper way to connect the pull down spring to the harness bar is with a heddle eye which should be screwed into the bottom part of the heddle bar. .

CONTRIBUTOR No. 8581 referred to a quantity of springs. Actually, only two springs are needed for each harness. After the spring has been connected to the harness, it is then connected to the floor by a spring block.

Regarding the shed being more than ⅛" off the shuttle race, this adjustment is made in the harness strap which is located between the harness strap hook and the top of the harness. If this adjustment makes the shed high on the race plate, correction may be made by simply letting out on the strap ⅛". The pull down spring will pull the harness down to properly locate the shed in relation to the shuttle race. CONTRIBUTOR No. 8582

Test for Spinning Ends Down

EDITOR TEXTILE INDUSTRIES:

A brief discussion of ends down in spinning is given on page 74 and concluded on page 77 of "Spinning Room Practice," which was prepared for TEXTILE INDUSTRIES several years ago and revised in 1951. This section is as follows:

Spinning Ends Down Tests. No doubt every mill has at some time or other made tests or kept records of ends down or end breakage over certain periods. We consider ends down tests of as much importance as the making of yarn weight and break tests; and the three tests—ends down, yarn weight, and tensile strength—indicate reliably how the work is running in the mill.

There are various opinions as to the proper method for checking ends down. Most of the mills, we believe, favor the classification of ends down by the causes of ends down, and we are including such a list herewith (pages 75 and 76). It has been our experience, however, that experienced spinners or even section men can classify with absolute certainty only about fifty per cent of the ends down, the rest being listed as *unknown*. The average person who is usually assigned this work will probably not do as well. We have, therefore, adopted the method of checking ends down by *spindle number*, making no attempt to classify as to causes.

By this method, as with the other method, the total number of ends down is obtained and the general running of the work is indicated. In addition to this, any spindles which have an excessive number of ends down are spotted and can be checked by the overseer or secondhand. Often the causes for the excessive number of ends down are found and corrected.

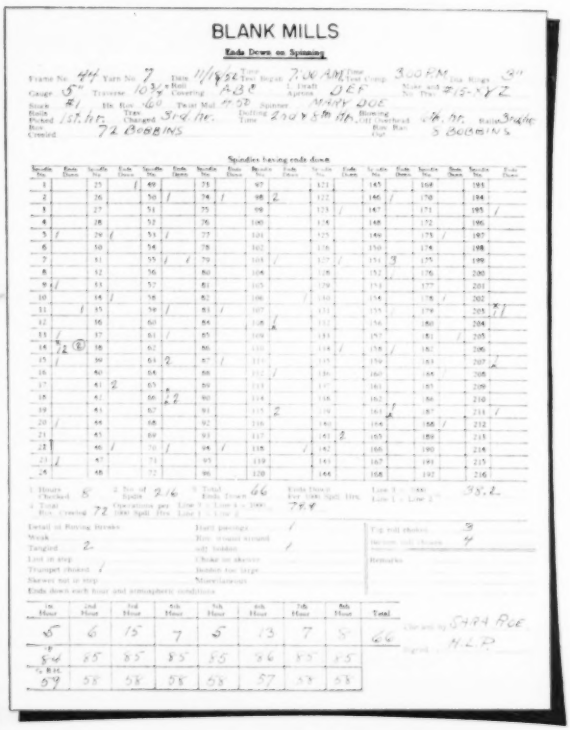
The form which we use for checking ends down by the *spindle number* method was not included in "Spinning Room Practice," but we are presenting the latest revision of it here. The form, as illustrated, is worked out to show just how it is used. It is used

Fig. 1

BLANK MILLS

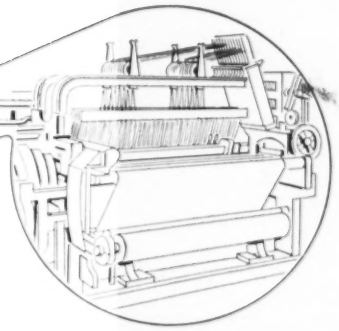
Ends Down on Spinning

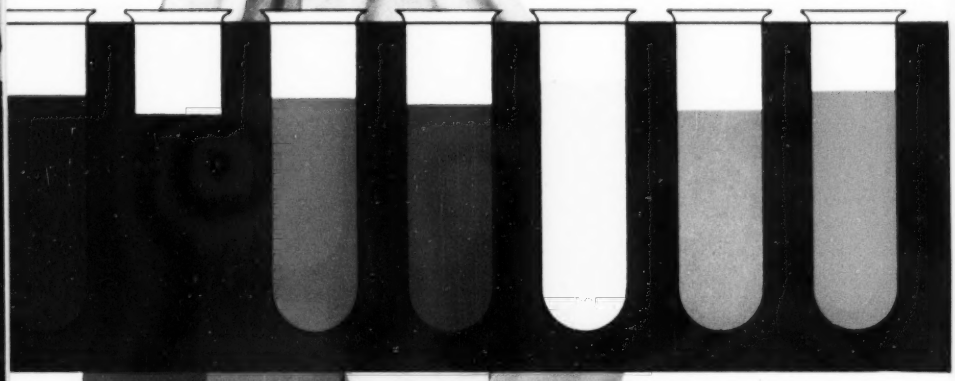
Fig. 2


BLANK MILLS

Ends Down on Spinning

custom-designed **COLORS**
for the **acetate** dyer . . .





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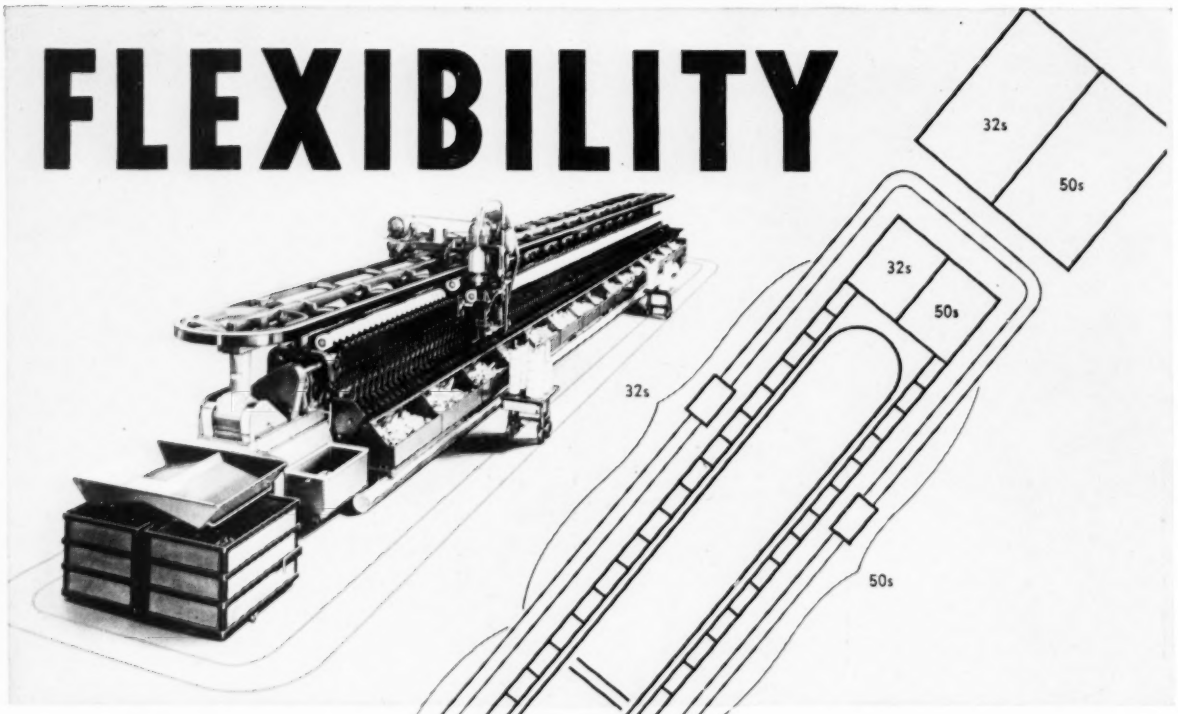

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★ Sorter tables are at *both ends* of the machine, with only one count in each half.

★ Trident tables are at *both ends* of the machine, divided so counts are separate.

★ There are separate operator trucks for each count, one truck for each "quarter" of the machine.

★ Conveyors are split, delivering toward both ends from the center of each side, so that empty and part-empty bobbins are automatically delivered to the correct sorter table.

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both as the *work sheet* (Fig. 1) and the *summary* (Fig. 2).

Although the form is practically self-explanatory, the following notes will probably help the reader understand it a little better:

1. The symbol (X) appearing *under* a tally mark (1/X) means that when this end came down there was a *bottom roll* choke.

2. The symbol (X) appearing *over* a tally mark (X/1) means that when this end came down there was a *top roll* choke.

3. After three (3) ends come down on the same spindle, this end is flagged. After the section man fixes the end, any further ends coming down on this spindle are circled.

4. Roving breaks are placed to the right of the space, as shown on spindles number 11, 25, 55, 106, 118, and 181. (Causes of roving breaks, when they can be determined, are shown near the bottom of the form.)

5. Roving allowed to run out, shown in the top section of the form, must also be recorded as *roving creeled* but will not be listed as an end down. This is simply an indication of how well the spinner is attending to her work and is not necessarily an indication of how the work is running.

6. It will be noted that in the top section are spaces for showing the hour, or hours, that travelers are changed, the frame doffed, blowing down, and blowing off rails. Spaces near the bottom are for the total number of ends down each hour. This will indicate whether any of the operations mentioned may have been the cause of an excessive number of ends down for any particular hour. (See 3rd and 6th hours.) Incidentally, ends knocked down by doffers and put up by them are not counted.

7. Operations per one thousand spindle hours are obtained by adding the total number of ends down and the total number of bobbins of roving creeled and working by the same formula for ends down per one thousand spindle hours.

In actual practice we send to the spinning room one copy of the completed summary together with the work sheets. The overseer keeps the completed copy in his office and gives the work sheets to the section man so that he can do further work on any spindles which had an excessive number of ends down.

In the event roving breakage is high, the overseer of the card room is notified so that he may take corrective measures.

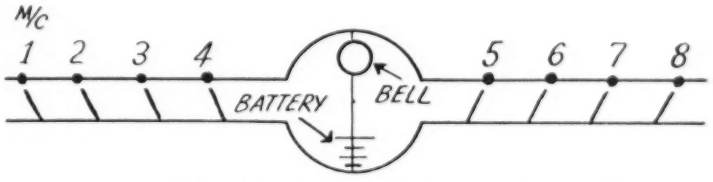
HORACE L. PRATT

Signal for Stopped Knitters

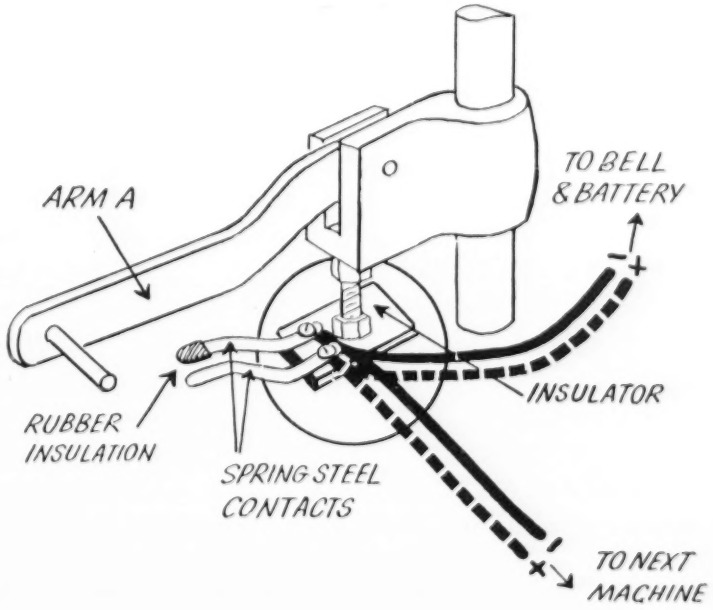
EDITOR TEXTILE INDUSTRIES:

We noticed that on some automatic, double-cylinder sock machines, production was lost by machine stopping automatically without warning. These machines stood for awhile unnecessarily if the operator was busy at the other end of the set.

To obviate this problem, we have fitted our machines with a simple electric bell arrangement to sound a warning when the machine stops. The attachment consists of two spring steel contacts fastened to a piece of electrical insulating board. The insulator is screwed onto the machine as shown in the accompanying sketch. The contact fixing screws serve as



WIRING DIAGRAM FOR 8 MACHINES



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- Economy in use
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- Protection against shrinkage
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- Freedom from "fly"
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We honestly doubt that there's a woolen or worsted mill in America where Proxol or Proxol-T cannot demonstrate its superior performance. When you check the many advantages of these time-tested wool oils, you'll understand why.

It will pay you to check the performance of Proxol and Proxol T in *your* mill.

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- Static control
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terminals underneath, and the top contact has a piece of rubber attached to it to prevent grounding. There is need for only one bell and a 3-volt battery for each set. The wiring is also shown in the accompanying illustration. Only one piece of twin flex is required between machines.

In the event of a stiff latch, press-off, or broken needle, arm (A) falls, closes the contacts, and the bell rings even before the machine comes to a standstill. Arm (A) is supported by the needle pointer usually, and when it falls the belt is automatically put on the free pulley.

The bell should be low pitched so that only the operator concerned can hear it, and the bell should be located in the center of the set of machines.

After fitting the forementioned attachment to our machines, we noticed an appreciable increase in production. The apparatus is not only applicable to sock machines but also to other machines equipped with inaudible stop motions, and it is particularly suitable where an operator works on several machines. The operator may proceed with his work without having to look back to see if all the machines are running. The device is simple, and any mechanic should be able to make the parts and install them ready for operation.

CONTRIBUTOR No. 8586

Layout for Stock Transfer Saves Time in Handling

EDITOR TEXTILE INDUSTRIES:

Materials handling is a fertile field for any mill to investigate in reducing costs. Manual materials handling constitutes one of the most costly items in a textile mill.

Usually when roving is doffed from the frame it is put in a box and pushed to the spinning room or to the nearest elevator if the spinning room is on another floor of the mill. In many instances this is true of laps to cards and yarn to spoolers or twisters. In any operation regarding the transfer of stock from one department to another, some manual labor is involved.

A close check usually will show that part of the manual labor could be dispensed with by arranging the machinery properly in both departments. Here is a typical example:

In one mill 80 hank roving was made on slubbers in the north end of the mill, and the roving was sent up to the spinning room on the elevator at the north end of the building. The 80 hank roving was run on spinning frames at the south end of the spinning room.

The spinning frames were rearranged and lined up so that roving made at the south end of the mill could be run on spinning frames at the same end of the mill. By rearranging the machinery layout in this way, the elevator operator could push the boxes of roving to the elevator and push them off at the spinning frames. The re-arrangement of machinery decreased the work loads of the transfer men so much that a time study indicated that two transfer men could be dispensed with. The cost of moving the machinery was approximately $775. In eleven weeks the change had been paid for, and costs were substantially reduced by analyzing material handling methods.

Many mills are adopting automatic materials handling methods, and some are using tractor trucks and fork lift trucks where alleys are wide enough and other hazards are not involved. These methods are costly to start although they quickly justify the money spent. Many mills are reluctant to adopt modern materials handling methods in view of the initial cost; however, the initial cost is usually amortized quickly. The average supervisor can find many spots where improvements can be made.

CONTRIBUTOR No. 8490

Remedy for Slack Ends in Weaving

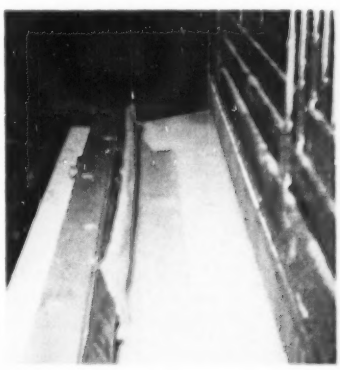
EDITOR TEXTILE INDUSTRIES:

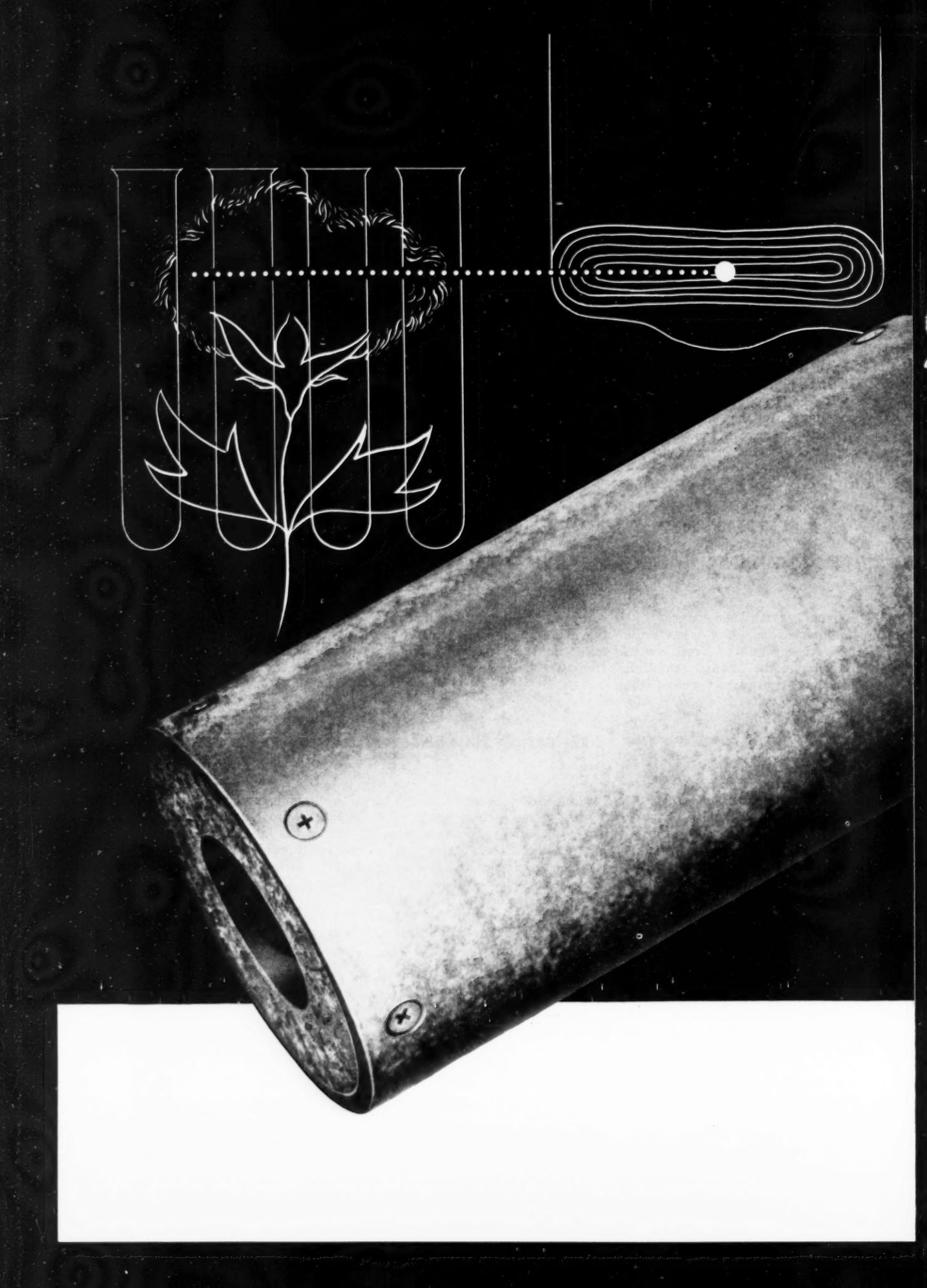
Very often when making a change in slashing, such as changing formulas, changing size pumps, etc., the yarn may become fuzzy and slack warp yarn become noticeable on the loom. To compensate for this we have devised a unique method that is both inexpensive and quick to install.

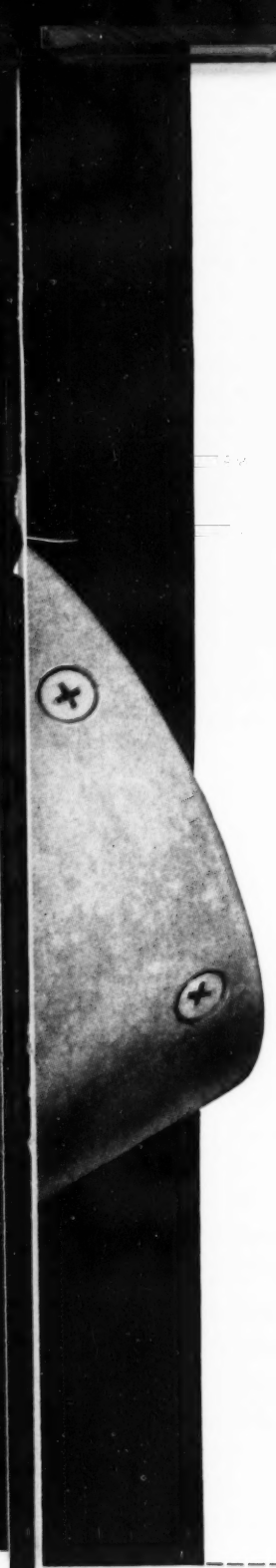
A piece of wool cloth about 36 inches in length and about 12 inches wide is folded and tacked to the back of the lay. The wool cloth is allowed to rest on the warp yarn while weaving. The wool cloth tends to pick up the fuzz or shed from the warp yarn and also creates some tension on slack ends.

The wool cloth is light and can't break or stretch the warp, as it is allowed to flap freely. The accompanying illustration shows the wool cloth tacked to the back of the lay. Of course this is used only when the ends are fuzzy and/or slack.

CONTRIBUTOR No. 8597







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Light, tough, smooth-wearing MICARTA will pay off for you on products like spinning buckets, shuttles, bobbins, pirns, picker sticks and gears. On other textile applications, too, you can take advantage of its ability to withstand and "cushion" heavy vibration and shock . . . to reduce nerve-wracking noise. MICARTA means economy, less maintenance, more production.

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WE GO TO JAIL

"We are very much interested in receiving descriptive literature on the MAK Spinning Machines, as offered on page 200 of Textile Industries for June, 1953. We would also like to receive the illustrated booklet concerning Special Dyeing and Bleaching Machinery offered on the same page.

"We have recently received legislative approval for the construction of a Cotton Textile Plant here at San Quentin, and would appreciate receiving any additional information you may have available."

J. J. PENTEK

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North, South, East and West—from the Rock Bound Coast of Maine to the Sunny Sea-Swept Shores of California, even in a prison, wherever textile mills are built—they look to TEXTILE INDUSTRIES for machinery, equipment and supplies.

With 54 years as the production and manufacturing journal for textiles, TEXTILE INDUSTRIES puts you in front of new mill construction as well as existing mills with the largest mill circulation in the U.S.A. and Canada of any textile publication.

TEXTILE INDUSTRIES sells the textile industry.

Textile Industries

What the TEXTILE MILLS are doing

(Continued from page 28)

tional Mallinson Fabrics Corp., Burlington is alleged to have acquired a number of trademarks, many no longer in use, embodying the word "Dream." These had been used in connection with piece goods, not manufactured garments.

From the Callaway Beacon, company magazine of **Callaway Mills Co.**, comes the news that as part of its Family Night fun program, the Milstead Weave Shop recently held a beauty(?) contest which, according to spectators, was reminiscent of Al Capp's Lower Slobbovians made famous in the L'il Abner comic strip. ***** Sponsored by the Callaway Educational Association, the Callaway Mills Co. Scholarship Plan, under which a total of 10 college scholarships may be awarded annually to high school graduates, is designed to encourage and assist young men and women in the area to prepare themselves through college training for positions of community leadership and service. Each award carries a maximum stipend of $750 per year, and applicants must be employees, or children or dependents of employees, of Callaway Mills Co. or its affiliates.

Chester (Pa.) Finishing Co. has begun operation of a new plant at East Stroudsburg, Pa., specializing in dyeing and finishing of nylon and other synthetic fabrics.

Interests headed by Irving Kutcher have purchased the **Chester (Pa.) Lace Mills, Inc.**

A recently-completed one-story building at Spruce Pine, N. C., is now being occupied by **Cline Hosiery Co.**

Clover Spinning Mills have announced plans for construction of a bleachery and dye plant at Jefferson, S. C. It will be used to bleach and dye knitted fabrics, cotton and synthetic yarns, and will be equipped to handle 100,000 pounds of cloth and 50,000 pounds of yarn weekly.

Natural gas is now being used as fuel for operating **Cone Mills Corp.'s** power plant at White Oak. This is the third type of fuel to be in use: hand-fired coal, used in boilers installed in 1905; and pulverized coal, to which the company changed in 1928. ***** Short summer courses have been given this summer to student employees, explaining processes of textile bleaching, dyeing, and various finishing processes. Last year the course was devoted largely to textile manufacturing, and was completed by 21 students.

A new finishing plant for processing corduroy fabrics is being constructed at Osceola, Ark., by the **Crompton Co.** of West Warwick, R. I. It has been styled **The Osceola Finishing Co., Frank E. Richmond Plant,** and contains some 160,000 sq ft floor space. In addition to the main building, there is to be a shop and maintenance building with 15,000 sq ft.

According to **Dan River Mills,** in the interest of economy they have purchased a flock of sheep to keep the grass cut in the mill enclosures, on the golf course, and the grounds surrounding the Dan River Lodge. Human hands are being released for the making of cloth. One mill official is said to have remarked, "They'll be turning out wool laps in the slasher

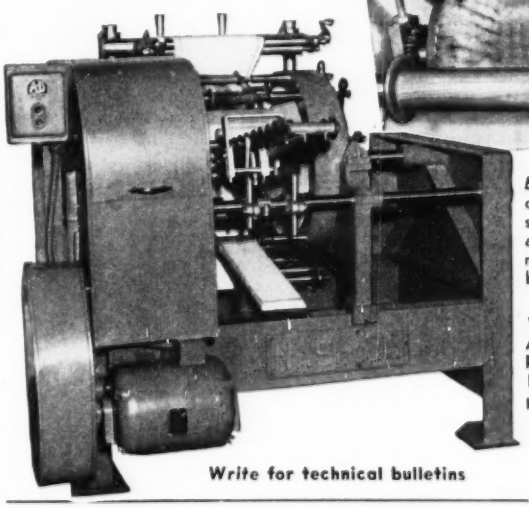
WASH FLANGED BOBBINS

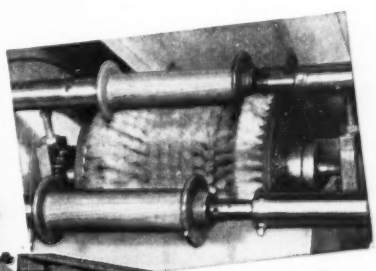
at 28 per minute with the

No. 89 NASH AUTOMATIC BOBBIN WASHER

This remarkable Nash machine is saving time and money for textile mills throughout the country. It's a ten-spindle machine that *does the entire washing and wiping operation* automatically from start to finish . . . eliminates the time and extra expense of hand washing. No dirt is left on bobbins to soil yarn on the finished fabric.

The cleaning solution has no harmful effects on yarn, either natural or synthetic . . . has a 140-degree flash point and is not toxic, assuring safe operation.





Brushes are self cleaning . . . brush sections may be added or easily removed for different bobbins.

We also manufacture Automatic Bobbin Refinishers, Quill Polishers and special-purpose machinery.

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What the TEXTILE MILLS are doing

room before you can say 'Baa'!"

The recently incorporated **D. & M. Woolen Mill, Inc.,** is being represented by James J. McAleer, 6 Anthony St., East Providence, R. I.

It is understood that arrangements have been made by **E. Dole Co.,** Mad River Mill, for lease of space in China Mill of Textron, Inc., Suncook, N. H., to be used as a branch mill.

Available to children of employees of **Dundee Mills, Rushton Cotton Mills,** and **Lowell Bleachery South** is the George Niles Murray Memorial scholarship, which provides a stipend of $1,000 per year, renewable at the beginning of each school year. The first winner was Miss Sherrill Brown, daughter of an employee of Dundee Mills.

Alexander Spitzer, 45 East 17th St., New York, N. Y., is representative for the newly chartered **Eagle Webbing Co., Inc.**

Fairview Hosiery Mills, Inc., Hickory, N. C., has completed construction of a new one-story mill and production has begun on a line of socks for men and boys. Dyeing and finishing equipment will be installed shortly.

Worsted machinery of **High Rock Mills,** Philmont, N. Y., brought a total of $125,000 at a recent auction.

Hightstown (N. J.) Rug Co. has plans for a new mill to be used for manufacture of velvet rugs. Project is reported to cost over $2,000,000.

Rayon and other textile fabrics will be manufactured by the newly organized **Hope Fabrics, Inc.** Sidney L. Rabinowitz, 70 12th St., Providence, R. I., is attorney and representative.

A new addition is being built to the mill of **Louis Hornick & Co., Inc.,** Haverstraw, N. Y., and equipment will be installed to triple present output.

Under construction at **Huntingdon Yarn Mill,** Philadelphia, Pa., is a one-story addition.

A building, costing $198,000, is being constructed as the first step in an expansion program at **Huntsville (Ala.) Manufacturing Co.** New machinery to be installed includes 430 looms, 24,000 spindles, and machinery for carding, drawing, roving, and warping.

Industrial Products of America has purchased the piece goods dyeing and finishing machinery of the Amcelle plant of the **Celanese Corporation** and is liquidating the plant.

A four-year scholarship to Philadelphia Textile Institute has been awarded by **A. & M. Karagheusian, Inc.,** to Donald Golvich of Freehold, N. J. This is the sixth year that the firm has awarded a scholarship to a graduate of the high school at Freehold, where the weaving mill is located.

La France Industries, Inc., has acquired a building at 12742 Puritan Ave., Detroit, Mich., to be used for factory branch, warehouse, and offices. La France Automotive Fabrics, Inc., affiliated interest, will be situated also at new address. The firm has acquired the Ottaray Mill plant in Anderson, S. C., for weaving operations of the Automotive Fabrics subsidiary.

The National Association for Better Radio and Television has given the 1952 television award to **James Lees and Sons Co.** for its sponsorship of "Meet the Masters." The firm also won honorable mention by the American Music Conference for "effective use of music as a theme in advertising in non-musical products or services during 1952."

Mohawk Carpet Mills, Inc., Amsterdam, N. Y., has acquired the tufted carpet manufacturing division of Scotland Mills, Laurinburg, N. C. A subsidiary under the name of Dixiana Mills, Inc., has been formed to operate this plant.

Munsingwear, Inc., has moved all its knitting machines from Des Moines to its new Bentonville, Ark., plant. The dyeing, finishing, shipping, and warehousing will remain at Des Moines.

A plant in Washington, D. C., will be built by **National Spinning Co. of New York.** It will be used to produce woolens and synthetic yarns, and is expected to employ 500 to 600 people.

The **Old Colony Knitting Mills, Inc.,** has under construction a new plant at Laconia, N. H., which will have approximately 15,000 sq ft floor space.

Opp and Micolas Cotton Mills, Opp, Alabama, have for several years been

When you need fast-wetting action, better detergency — specify

LAUREL SYNTHETIC DETERGENTS

Hundreds of processors rely on Laurel Synthetic Detergents for speedier penetrating and scouring action on all fibers and fabrics. Unusual stability . . acid, alkali or hard water. Available in powder or liquids. Write today for samples and recommendations.

Coning and Spinning Oils for all fibers. Antistatic compounds. Penetrators. Finishes for specific applications.

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Wm. H. Bertolet's Sons
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presenting cash prizes for winning essays written by members of the senior class of Opp High School. Winners this year were: 1st place "Where Do We Go From Here in Socialized Medicine," by Edmond Lawrence; 2nd place "Atomic Energy Developments," by Donald Chapman; and 3rd place "The Wonder Fabrics —Synthetics," by Rosalyn Woodham.

Pacific Mills' No. 10 mill at Lawrence, Mass., has been sold to trustees of the Franklin Hampshire Realty Trust.

The present building of **Palmetto Worsted Mill,** Laurens, S. C., will be enlarged to 21,000 sq ft, with the present working force of 70 expected to be increased to 125.

Prudential Worsted Co., Doylestown, Pa., has discontinued operations and machinery and equipment offered at public auction.

Rex Mills, Inc., has installed a new laboratory unit for testing cotton knitting yarns. The company is an interest of **Aberfoyle Manufacturing Co.**

Francine Richards Knitwear Co., Inc., has been incorporated to manufacture knit outerwear. Max Lehrer, 2836 Third St., Brooklyn, N. Y., is attorney and representative.

Rumart Knitwear, Inc., recently chartered, is represented by Florence Niedergang, 11 West 42nd St., New York City.

A one-story knitting mill at Fort Payne, Ala., will be erected by **Shugart Brothers.**

J. B. Simpson Co., Inc., was recently chartered to manufacture rayon yarns, threads, as well as spun rayon fabrics. Joseph B. Simpson, Jr., Charlotte, N. C., is principal incorporator.

The **John T. Slack Corp.,** Springfield, Vt., one of the largest wool dry carbonizing plants in the country, was sold in auction bankruptcy sale on June 16.

Guilford Hosiery Mills, Inc., High Point, N. C., has been purchased by **Slane Hosiery Mills, Inc.,** and both mills will be consolidated.

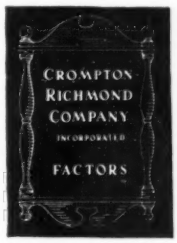
Alexander Smith, Inc., has announced plans for construction of a dye house at the mill, to cost about $200,000 with equipment. The firm has also made arrangements to use the carpet-making facilities of the Barwick mill in Dalton, Ga., for its cotton broadloom line.

Standard-Coosa-Thatcher Co. has moved its New York office to the Empire State Bldg.

A waste reduction contest is being conducted by "The Spectator," employee publication of **Elberton (Ga.) Mills** of **United Merchants and Manufacturers, Inc.,** with prizes being awarded for winning suggestions. The **Clarkesville Division Mills** will have a one-story addition, about 100,000 sq ft floor space, to be equipped for expansion in the rayon weaving department.

"Pix," published weekly in Sydney, Australia, carried in a recent issue a pictorial presentation of the city of Wangaretta. Prominent among the points featured were the spacious **Bruck Mills (Australia) Ltd.,** whose 45 acres of ground include recreation rooms and hospital facilities for the employees.

A new branch rayon weaving mill is being constructed for **Verney Corp.,** Manchester, N. H., at Richmond Hill, Ga.



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LATE BULLETINS

1-C Booklet gives details of Johnson Aspirating Cabinets which are designed to provide accurate control of temperature and humidity. Write for Bulletin H-400, Johnson Service Co., Milwaukee 2, Wisconsin.

2-C Booklet shows new and improved features of standardized conveyors for materials handling. Gives details of Logan Conveyor ADAPTO UNITS. Write Logan Co., 206 Cabel Street, Louisville 6, Ky.

8-1 Grease-Sealed, Anti-Friction Top Rolls. Well illustrated catalog by Cole Engineering Corp. shows types of "Precision Rolls," construction and advantages. Also includes a price list with quotations covering costs through 2¼". Write Cole Engineering Corp., 400 32nd St., Columbus, Ga.

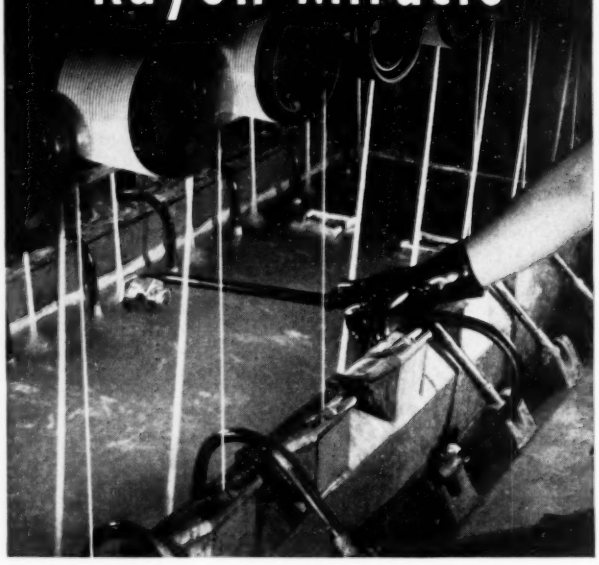
8-2 Carolina Machinery Company's SRRL. Color pamphlet shows operating principles of the CMC-SRRL lint cotton opener. Also gives results of mill experience with opener showing estimated yearly savings for cotton. Write Carolina Machinery Co., Inc. P. O. Box 1922, Charlotte 1, N. C.

8-3 Automatic Lift. Bulletin by W. T. Lane & Bros., Inc., pictures and describes the Lane Automatic lift. Shows how it keeps work in basket or truck at rim level. Specifications given. Write W. T. Lane & Bros., Inc., Poughkeepsie, New York.

8-4 Engineered Conveyor Systems. Booklet by Alvey Conveyor Co. describes and illustrates the application of engineered package handling systems in industry to increase plant efficiency. Write for 2591, Alvey Conveyor Mfg. Co., 9306 Olive St. Rd., St. Louis 24, Mo.

8-5 Dyeing of Dacron. How to use benzoic acid or sodium benzoate to dye Dacron, is described in detail in a technical bulletin available from Monsanto Chemical Company's Organic Chemicals Division. Write Monsanto Chemical Co., St. Louis 1, Mo.

Three feet of a Rayon Miracle



This short length of Superior tubing—original equipment on Industrial Rayon Corporation's continuous spinning and process machines—carries viscose the last three feet to the spin bath where it's forced through spinnerets to solidify as filaments of rayon yarn.

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West Coast: Pacific Tube Company, 5710 Smithway St., Los Angeles 22, Calif. UNderhill 0-1331

8-6 Industrial V-Belts. 60-page catalog on Industrial V-Belts and their applications. A technical bulletin, it is specifically prepared for design engineers, maintenance engineers who will find it invaluable as a V-Belt power transmission guide. Write Durkee-Atwood Co., Dept. 411, Minneapolis 13, Minn.

8-7 Training for Success in Textiles. Book by International Correspondence Schools shows the lack of education can be overcome by initiative and suggests some excellent methods for advancement in the mill. Concerns home study courses. Write International Correspondence Schools, Scranton 9, Pa.

8-8 Keeping Slasher-Tenter Dryer Production Normal. Bulletin by Strandberg Engineering shows how the "Moisture Monitor" may be employed to increase slasher room production without fear of wet warps. Write Strandberg Engineering Laboratories, 416 East Market St., Greensboro, N. C.

8-9 Spinning Frame Drive. Booklet in color gives advantages of Dodge Spinning Frame Drive, showing how it cuts down-time on Speed changes, Increases Production. Write Dodge Manufacturing Corporation, Mishawaka, Ind.

8-10 Instrumentation for Slasher Room Processes. Honeywell Bulletin 9306 discusses practically all slasher room instrumentation. The benefits of measurement and control are discussed without excessive treatment of technicalities. Write the Minneapolis-Honeywell Regulator Co., 7th & Grange Sts., Philadelphia, Pa.

8-11 Cyl-Air Slasher-Dryer. Bulletin describes West Point's Cyl-Air Slasher, a combination cylinder and hot air slasher dryer. Shows cut-away interior view and gives advantages. Write West Point Foundry and Machine Co., West Point, Ga.

8-12 Simple Recorder Controller. 16-page illustrated bulletin describes the restyled Foxboro case controller. Showing typical textile applications, it discusses each unit of a pneumatic control system from the measuring element to the control valve. Write The Foxboro Company, Foxboro, Mass.

8-13 Heavy Duty Rotary Pumps. Color booklet by Worthington Pump shows fields of application (including dyeing, bleaching and finishing) of Worthington's Heavy Duty Rotary Pumps. Includes diagrams and performance charts. Write Worthington Corporation, Harrison, New Jersey.

8-14 Maintenance of Control Equipment. What to look for in maintaining control equipment properly, is told in eight-page manual entitled "Proper Maintenance of Control" by Allis-Chalmers. Gives helpful suggestions and trouble-shooting tips. Write Allis-Chalmers Mfg. Co., 1054 S. 70th St., Milwaukee, Wis.

8-15 24-Roll Double-Action Napper. Color booklet gives complete picture of Davis & Furber's "Simplex" Napper, showing construction and equipment, operation procedure and adjustments. Write Davis and Furber Machine Co., North Andover, Mass.

8-16 "Fiber Facts" by Avisco. Booklet gives latest data on the physical properties of all the major man-made fibers in handy form, and also includes spinning twist calculator, denier conversion table, and tables of warp and filling yarn. Write American Viscose Corp., 1617 Penn. Blvd., Philadelphia 3, Pa.

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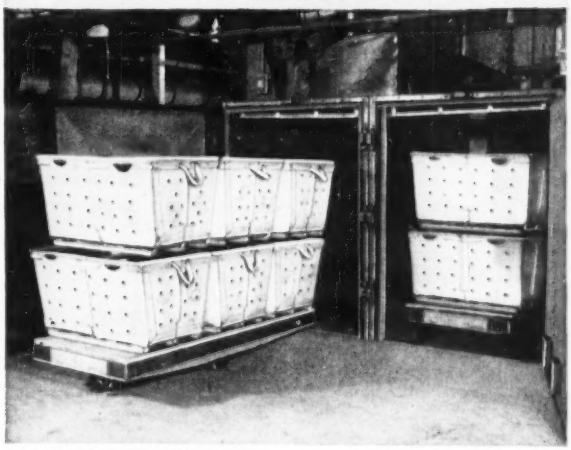

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No.	Long	Wide	Deep
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2½	24"	15"	15 "
3	24"	18"	15½"
3½	24"	18"	18 "
4	30"	18"	16 "
4½	30"	18"	18½"
5	30"	18"	20½"
6	30"	20"	20½"
8	34"	22"	23 "
10	36"	24"	25 "
12	36"	26"	27½"

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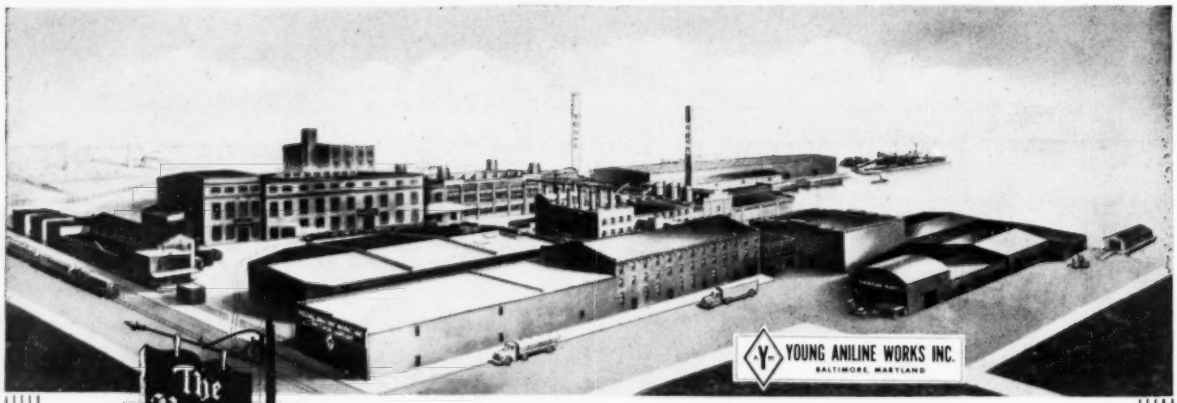

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GENERAL, ECONOMICAL, MANAGEMENT . . .

4. HOW FACTORING CAN INCREASE PROFITS —Describes how factoring works out in keeping clients' capital liquid and attitude of factor toward checking credits, including typical balance sheet.—COMMERCIAL FACTORS CORP., New York City.

7. RAYON TELLS ITS STORY TO THE PUBLIC —Folder containing reprints of advertisements explaining some of the many roles in which rayon is serving the American public. —AMERICAN VISCOSE CORPORATION, 350 5th Ave., New York 1, N. Y.

17. A FAIR DAY'S PAY AND IN RETURN A FAIR DAY'S WORK—8-page booklet outlining the services offered to industry for the proper utilization of labor, material and equipment, and the resulting advantages for both labor and management.—AMERICAN ASSOCIATED CONSULTANTS, INC., 250 Park Ave., New York, N. Y.

18. FACTORING—Information available on how factoring works to aid client in keeping capital fluid and to avoid credit losses. Inquiries regarding these services welcome.—L. F. DOMMERICH & CO., 271 Madison Ave., New York 16, N. Y.

19. INDUSTRIAL BUILDING — A 32-page booklet entitled "U.S.S. 12, U.S.S. 17 Stainless Steel Walls and Roofs for Industrial Buildings," is now available for distribution. This publication illustrates the use of type 410 and type 430 Stainless Steel Sheets in the construction of industrial and semi-industrial buildings. U. S. STEEL CO., 525 WILLIAM PENN. PL., PITTSBURGH 30, PA.

20. VISION TESTING EQUIPMENT — Pamphlet entitled "What You Can Expect From a Good Vision Program" written by a prominent personnel director. Also circular describing the Keystone Occupational Visual Service. — KEYSTONE VIEW COMPANY, Meadville, Pa.

22. THE WONALANCET WAY — Is the title of a editorial booklet published five times a year and deal with current problems which appear worthwhile at the time they are written. — WONALANCET COMPANY, 128 Burke St., Nashua, N. H.

PLANT & PLANT MAINTENANCE . . .

101. TEXTILE DIGEST — 18-page manual reviewing performance-proved procedures for improved handling of more than 60 essential cleaning and related operations in textile mills. — OAKITE PRODUCTS, INC., 22 Thames St., New York, N. Y.

102. "TANK TALK"—Sixteen page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said. — R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

103. HUMIDIFICATION, EVAPORATIVE COOLING — Bulletins available displaying AMCO automatic self-cleaning atomizers, controls, and evaporative cooling equipment. — AMERICAN MOISTENING CO., 260 W. Exchange St., Providence, R. I.

107. FINNELL SCRUBBERS — Illustrated leaflets describing and giving specifications for the Finnell floor scrubbing machines.—FINNELL SYSTEM, INC., Elkhart, Ind.

108. MAPLE FLOORING—Booklet describing finishing of Northern Hard Maple Flooring — list of M.F.M.A.-approved heavy-duty floor finishes.—MAPLE FLOORING MANUFACTURERS ASSOCIATION, Pure Oil Bldg., 35 East Wacher dr., Chicago 1, Ill.

109. CARD STRIPPER — Portable dustless card stripper described in bulletin 1050. Advantages of dustless stripping when combined with thorough brush stripping. Used alone or with other systems discussed.—PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

111. INDUSTRIAL FANS—Catalog sheets with specifications describing the complete line of Murray Industrial fans for plant ventilation. Seven sizes described from 24" with 1/3 HP motor delivering 5700 CFM to 54" with 3/4 HP delivering 17,386 C.F.M. with advantages of heavy gauge metal construction brought out.—H. C. BIGLIN CO., 177 Harris St., N.W., Atlanta, Ga.

113. COTTON MILL EQUIPMENT — This book traces pictorially the steps in processing raw cotton into finished cloth. It shows the equipment needed for all phases of production, as well as containing a "Useful Information" section on Power Factor Correction, Lighting, Circuit Protection, etc.—WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

119. MOPPING EQUIPMENT — Complete catalog and circulars containing information on the many sizes and styles that can be had.—S. C. LAWLOR CO., 121 N. Aberdeen St., Chicago, Ill.

121. STEAM GENERATORS — Bulletin P-1 describes compact package type boiler for heating, power, or processing. Described as fully automatic, firing all liquid or gaseous fuels.—THE CYCLOTHERM CORP., Oswego, N. Y.

126. "SENTRY-LITE" — bulletin illustrating and describing light unit that comes on automatically when power fails, illuminating 10,000 sq. ft. 9 hours or longer. CLEVELAND ELECTRIC CO., 557 Marietta St. N.W., Atlanta 3, Ga.

127. SOLENOID VALVES — Bulletin "V" lists sizes from 1/2 inch to 3 inches; valves for normally open or closed service; stainless steel or Jenkins disc seats; three way solenoid valves, etc.; typical installations.—THE JOHNSON CORP., Three Rivers, Mich.

129. AIR CONDITIONING AND HUMIDIFICATION — Catalog section 101 lists and briefly describes each item of the complete Bahnson line of equipment for textile mill air conditioning and humidity control.—THE BAHNSON COMPANY, Winston-Salem, N. C.

130. LIGHTING EQUIPMENT — Bulletin lists and describes the Crouse-Hinds line of lighting equipment which includes flood lights, searchlights, types of industrial lighting fixtures of vaportight, dust-tight, and explosion-proof types. — CROUSE-HINDS COMPANY, Syracuse 1, N. Y.

131. "AIR PROCESSING" — Set of three bulletins showing real meaning of the term, where it can be used, the requirements for a successful system, etc. J. O. ROSS ENGINEERING CORP., 444 Madison AVE., New York 22, N. Y.

133. PAINTING SPECIFICATIONS AND COLOR CHIPS—Industrial Paint and Color Guide, CC446, gives full painting specifications for exterior and interior of industrial plants with complete color samples. — THE SHERWIN-WILLIAMS CO., Painter Maintenance Div., Cleveland, Ohio.

135. COLOR CONDITIONING — Booklet illustrated in color describes how Du Pont color conditioning puts color to work for you. Many ideas on safety brought out which color can aid. — E. I. DUPONT DE NEMOURS & CO., INC., Finishes Div. Wilmington 98, Delaware.

137. PUMPS AND COMPRESSORS — Bulletin QP-11 presents the standard types of Gardner-Denver air compressors, centrifugal pumps, steam and power reciprocating pumps in a brief and comprehensive manner to enable the prospective user to select the size and type for specific needs.—GARDNER-DENVER CO., Quincy, Ill.

138. METAL CONVEYOR BELTS — Recent catalog describes and illustrates Ashworth's entire range of manufacturers, including the new Flat Wire Belt design and application, along with their Woven Wire Constructions and Positive Drive Chain Edge Belts. — ASHWORTH BROS. INC., Metal Products Div., Fall River, Mass.

139. STEEL SHOP EQUIPMENT — Write for profusely illustrated Hallowell folder describing lines of shop desks, tool stands and carriers, cabinets, etc., adaptable to a wide range of uses. STANDARD PRESSED STEEL CO., Box 582, Jenkintown, Pa.

146. FUNCTIONAL GLASS BLOCK DATA — Folder shows in detail daylighting function of Light-directing and Light-diffusing Functional Glass Blocks. PITTSBURGH CORNING CORP., 307 4th Ave., Pittsburgh 22, Pa.

149. ELECTRIC AUTOMATIC LEVER CONTROL —Bulletin F-4432 illustrates and describes Barber-Colman Automatic Electric Lever Control designed to regulate the level of solutions commonly used by industry. Ease of installation is emphasized. — BARBER-COLMAN CO., Rockford, Ill.

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150. RIHCO HUMIDIFIERS AND COOLING SYSTEMS—Bulletin describes new atomizers with construction lessening air consumption in humidifier systems, evaporative cooling systems. — ALDRICH MACHINE WORKS, Greenwood, S. C.

151. INDUSTRIAL BRUSHES—Illustrated Booklet of industrial brushes featuring textile usage on shears, printing machines—also flock, raising and cylinder brushes.—M. W. JENKINS SONS, INC., 444 Pompton Ave., Cedar Grove, N. J.

153. LAMINATED TEXTILE PLASTICS—BOOKlet by Synthane Corporation shows variety, application, and advantages of laminated plastic parts and supplies for the textile industry. Write: SYNTHANE CORPORATION, Textile Division, Oaks, Penna.

154. AIR CONDITIONING FOR THE TEXTILE INDUSTRY — Booklet shows advantages of air conditioned mills in better products and more efficient workers, and gives values of White & Co., air conditioning in particular. Write WHITE & CO., INC., 1440 S. Tryon St., P. O. Box 533, Charlotte, N. C.

155. DUCTLESS AIR CONDITIONING—24-page illustrated Catalog No. 2 on Amco humidification and ductless evaporative cooling, along with other Amco humidification devices. Contains relative humidity tables and textile regains. — AMERICAN MOISTENING CO., Providence, R. I.

162. MODERN METHODS OF TEXTILE FLOOR MAINTENANCE—Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs as well as preserving textile mill floors.—G. H. TENNANT COMPANY, 2530 N. Second St. Minneapolis 11, Minn.

157. MAINTENANCE — Silicone water-repellent for masonry described in data sheet XR-129G-1. Properties and application of an invisible, durable, non-plugging, silicone masonry water repellent that is inexpensive and easy to apply fully discussed.—DOWCORNING CORP., Midland, Mich.

165. CLEAN, DRY, COMPRESSED AIR — 8-page color illustrated bulletin thoroughly describes aftercooling, air separating, and air filtering. Also gives size and capacity of R. P. Adams equipment. Write R. P. ADAMS COMPANY, INC., 216 E. Park Drive, Buffalo, New York.

167. COLOR CONDITIONING FOR INDUSTRY—Booklet describing how color is used to reduce maintenance costs, increase production, curtail fatigue, improve employee morale.—E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIV., Wilmington, Delaware.

169. MACHINE BRUSHES. Illustrated Folder shows many types of machine brushes and describing their particular use for printing, washing, brushing, slingeing, and shearing is sent free upon request. Write: INDUSTRIAL BRUSH COMPANY, INC., Woodside Avenue, Little Falls, New Jersey.

173. BLOWERS AND EXHAUSTERS — Bulletin No. 3014-D describes types "E" and "RE" electric blowers and exhausters. Uses and full description of each with detail drawings.—BUFFALO FORGE CO., 490 Broadway, Buffalo 5, N. Y.

179. BETTER WAYS — Form 2020, condensor catalog of standard and special model Toledo Industrial Scales that are being used in receiving, shipping, and production operations by all industries including the textile field.—TOLEDO SCALE CO., Box 97, Toledo, Ohio.

181. AIR FILTRATION — Bulletin 234 describes and illustrates the Auto-Airmat, which is the Automatic Dry-Type air filter. Principle of operation, performance, characteristics, construction and installation fully discussed.—AMERICAN AIR FILTER COMPANY, INC., 275 Central Ave., Louisville 8, Ky.

188. PROGRESSING-CAVITY PUMPS — A new principle in pumps. Self-priming, positive displacement, uniform flow features discussed. — ROBBINS & MYERS, INC., Pump Div., Springfield, Ohio.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION . . .

201. V-BELT DRIVE CATOLOG — This handy, pocket-sized catalog helps you make quick and easy selections of any Dayton V-Belt Drive from 1 to 1000 HP. Contains many concise, accurate drive tables, diagrams, and other important engineering data.—DAYTON RUBBER CO., Dayton, Ohio.

202. RELIANCE MOTOR — Bulletin C-130 on the explosion-proof, corrosive-resisting a-c motor. Design features exclusive with the new motor are enumerated and illustrated in the bulletin.—THE RELIANCE ELECTRIC & ENGINEERING CO., 1076 Ivanhoe Road, Cleveland, Ohio.

203. TREADED LEATHER BELTING — This 16-page booklet describes Houghton's line of patented, specially treaded leather belting for all types of power transmission. Booklet includes valuable engineering and maintenance section.—E. F. HOUGHTON & CO., Philadelphia, Pa.

212. GATES TEXTILE ACCESSORIES — Handy pocket-size catalog BHM-7, fully illustrated, gives specifications of Gates textile accessories including pickers, lug straps, check straps, cone belts, evener belts, harness straps take-up roll covering and others. —THE GATES RUBBER COMPANY, 1001 Broadway, Denver 17, Colo.

215. MOTORS FOR ROVING & SPINNING FRAMES — Booklet describes Louis-Allis soft-start textile motors. Gives charts showing speed torque curves; illustrating that a standard motor has too much standard Torque and too rapid acceleration. Write: THE LOUIS-ALLIS COMPANY, Milwaukee 7, Wisconsin, for Bulletin 801.

218. BALL BEARINGS FOR TEXTILE MACHINERY — A 40-page catalog illustrating Fafnir Ball Bearing units for replacement or new applications in all phases of textile processing. — THE FAFNIR BEARING CO., New Britain, Conn.

221. OILER MANUAL — Highly informative and helpful manual explains in detail the proper application of Trico, visible, automatic oilers to various bearing surfaces. Construction information and valuable suggestions.—TRICO FUSE MANUFACTURING CO., 2948 N. 5th St., Milwaukee 12, Wis.

226. COTTON CARD DRIVES—Booklet B-4596 which describes Westinghouse individual cotton card drives. Through the proper design of card motors by Westinghouse, individual drive is now practical and the booklet gives full information. — WESTINGHOUSE ELECTRIC CORPORATION, P. O. Box 868, Pittsburgh 30, Pa.

227. WOOLEN AND WORSTED MILL ELECTRIC EQUIPMENT — Booklet by Westinghouse follows processes through the mill and shows application and advantages of Westinghouse equipment. Write for: B-4698. WESTINGHOUSE ELECTRIC CORP., Box 2099, Pittsburgh 30, Pennsylvania.

229. DODGE GENERAL POWER TRANSMISSION MACHINERY — Catalog describes various types of power transmission apparatus by Dodge. Gives specifications, sizes, applications, and prices. Very comprehensive. Write: DODGE MANUFACTURING CORP., Mishawaka, Indiana.

230. HEAT RESISTING LUBRICANT — Descriptive pamphlet on Ben Boy High Heat Resisting Lubricant for use in any bearing using excessive amounts of oil or grease or frequent bearing failures. — GEORGIA-CAROLINA OIL CO., 1405 Sixth St., Macon, Ga.

235. JOHNSON LEDALOYL BEARING BRONZE —Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and

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bushings. — JOHNSON BRONZE COMPANY, New Castle, Pa.

236. **LEATHER BELTING CALCULATOR**—Handy and attractive calculator for determining belt, speeds, horsepower per inch of belt widths, etc., will be sent free on request.—J. E. RHOADES & SONS, 35 N. 6th St., Philadelphia, Pa.

237. **MOTOR CONTROL** — Brochure gives description and engineering data on the Cutler-Hammer Motor Control for roving and spinning frames. Users listed and advantages discussed. — CUTLER-HAMMER INC., Milwaukee, Wisc.

239. **LICKERIN AND DOFFER BELTS** — Brochure and full information on Lickerin and Doffer belts supplied by: TON-TEX CORPORATION, 16 West 61st St., New York 23, N. Y.

254. **LOOM RECONDITIONING PROGRAM AT TALLASSEE MILLS**—Reprint of exclusive story on the loom reconditioning program at one of the biggest southern mills. This article shows how central lubricating system was built into each rebuilt loom as part of the improvement program. — BIJUR LUBRICATING CORPORATION, Rochelle Park, N. J.

259. **SUNOTEX MACHINE OIL** — Booklet describing this machine oil is being "custom-made" for the textile industry. Advantages discussed and pictures of uses which includes knitting machinery. SUN OIL COMPANY, Philadelphia 3, Pa.

262. **SMALL PRECISION METAL PARTS** — Catalog by Torrington Company describes many special precision metal parts made by its Specialties Division. — Write: THE TORRINGTON COMPANY, Specialties Division, 500 Field Street, Torrington, Connecticut.

265. **SERVICE PROCEDURE FOR BALL BEARINGS** — A helpful manual for maintenance engineers giving helpful hints on disassembly, inspection, cleaning, lubrication, and replacement of ball bearings in any mechanism. — NEW DEPARTURE, Division of General Motors Corp., Bristol, Conn.

266. **SILICONE LUBRICATION** — Bulletin 62-IC, describes properties of Silicone greases used in motors at high speeds and temperatures, on oven conveyors, tenter frames, can dryers, etc. Decrease by 10 to 1 in re-lubrication requirements described. —DOW-CORNING CORP., Midland, Mich.

277. **SPECIAL TEXTILE MOTORS** — Bulletin 81B6055A describes special features of "Quick-Clean" motors, including discussion on free air flow, pre-lubricates bearings, rigid cast iron frame and double insulation. — ALLIS-CHALMERS MFG. CO., Milwaukee, Wis.

INSTRUMENTS, STEAM SPECIALTIES

301. **JOHNSON ROTARY PRESSURE JOINTS**—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instruction, types, sizes, dimensions and prices.—THE JOHNSON CORP., Three Rivers, Mich.

302. **HYPERSONIC AND ULTRASONIC INSTRUMENTS** — Illustrated catalog covering uniformity analyzer, acoustical measuring devices, and other non-destructive industrial measuring instruments. Illustrated brochure describing hypersonic equipment for both laboratory and pilot plant use in the field of ultrasonics.—BRUSH DEVELOPMENT CO., 3405 Perkins Ave., Cleveland 14, Ohio.

303. **PROCESS CONTROL EQUIPMENT**—Catalog containing brief description of standard and special process control equipment engineered for textile industry. Includes schematic diagrams. — MASON-NEILAN REGULATOR CO., 1190 Adams St., Boston, Mass.

311. **PIPING POINTERS** — Industrial maintenance book covering installation and handling of piping, valves, fittings. Well illustrated, practical tips.—CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.

314. **MOISTURE CONTENT CONTROL** — Bulletin F-3156 giving details of features and benefits of moisture equipment control for slashers and textile applications.—BARBER-COLMAN CO., Rockford, Ill.

321. **RED-RAY BURNERS** — Bulletin describing use of Red-Ray Burners in preheating and partial drying to increase capacity of frame.—RED-RAY MFG. CO., 445 W. 45th St., New York, N. Y.

324. **STROBOTAC** — Informative reprint, "Strobotac Boosts Efficiency in Woolen and Synthetic Mills." — GENERAL RADIO CO., Cambridge 39, Mass.

332. **NEW INFORMATION ON INSTRUMENT GAGES** — 24-page bulletin by Taylor Instrument Companies supplies considerable information on features, dials, and scales available to textile industry with excellent reference material on different types of actuation. — Write for No. 98214, TAYLOR INSTRUMENT COMPANIES, Rochester 1, New York.

312. **ACCURATE MEASURE** — Booklet describing the Trumeter line of measuring machines for silks, cottons, linens, woolens, etc. Description and illustration of each machine with dimension diagrams and advantages of each machine.—THE TRUMETER CO., 1265 Broadway, New York, N. Y.

400. **THE TRAVELER** — Booklet on ring travelers published quarterly with a technical article on spinning and twisting of interest to mill men—VICTOR RING TRAVELER CO., Providence, R. I.

CARDING, SPINNING, WINDING . . .

401. **LUMMUS DUSTLESS, STEEL BLENDING FEEDERS** — Bulletin describing automatically closing, positively locking door on feeders to prevent overloading, choking.—ALDRICH MACHINE WORKS, Greenwood, S. C.

402. **AUTOMATIC CLEANING AND OVERHEAD HANDLING FOR TEXTILE MILLS**—24-page bulletin describing the American Monorail Automatic Cleaner for preventing accumulation of lint on spinning, twisting, winding and warping machines. Also for cleaning monitors and card room ceilings.—THE AMERICAN MONORAIL CO., Cleveland, Ohio.

404. **LAPLESS ENDLESS SPINNER**—Bulletin and full information will be supplied on lapless endless spinner and coning belting.—TON-TEX CORPORATION, 16 West 61st St., New York, N. Y.

405. **UPTWISTERS PRODUCING TWO NEW TAKE-UP PACKAGES**—Tapered and headless for all low twist yarns and King Spool for high and low twist yarns without sloughing. High speed delivery without coning. Fully discussed in booklet.—FLETCHER WORKS, INC., Philadelphia, Pa.

408. **CARD GRINDING INFORMATION** — Outlines care of grinders, instructions on speed to run grinders, amount of oil to add to machine and other pertinent information.—B. S. ROY & SON CO., Worcester, Mass., and Charlotte, N. C.

409. **ROTO CONER**—Bulletin describing Universal rotary traverse winder, known as the Roto Coner, producing open wound cones or knitting and warping; parallel tubes for package dyeing, twisting, and sale yarn.—UNIVERSAL WINDING CO., Providence, Rhode Island.

412. **SERVICE FOLDER**—Folder covers textile metal products including spinning and twisting cylinders, card screens, etc.—JENKINS METAL SHOPS, INC., Gastonia, N. C.

414. **WORSTED SPINNING**—Bulletin explaining and illustrating Saco-Lowell's new system for worsted

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416. THE BRIEF SAGA OF THE RING TRAVELER — An interesting history relative to the ring traveler, which is in reality the basis of the spinning frame. John Thorpe's invention of ring traveler, the development of the spindle, and the invention of Raheth's Bolster type spindle are covered.—NATIONAL RING TRAVELER CO., Pawtucket, R. I.

418. PACIFIC CONVERTER—Graphic description of machine that cuts any synthetic tow; and when desired, blends it with wool or staple sliver, keeping the fibers parallel, and issuing an even sliver of accurate blend.—WARNER & SWASEY CO., Cleveland, Ohio.

419. TEXTILE APRONS—Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery.—TEXTILE APRON COMPANY, East Point, Ga.

420. AUTOMATIC FILLING WINDING — Eight page, two color booklet describing the operation and mechanism of the Hacoba winder. — ATKINSON, HASERICK & CO., 211 Congress St., Boston, Mass.

421. CARD ROLL COVERS — Brochure describes the Davis Seamless Roll Covers. Lists advantages, specifications and offers free trial. — THE TEXTILE LABORATORIES, P. O. Box 1003, Gastonia, N. C.

422. MODERN TEXTILE ROLL COVERING—Illustrated booklet on roll covering problems with charts on correct usages. Also data on Acetex long draft aprons.—ARMSTRONG CORK CO., Industrial Division, TEXTILE PRODUCTS SEC., Lancaster, Pa.

430. DIXON DATA — Dixon house organ entitled "Dixon Data," which is available in a new form every other month. These house organs contain information on spinning problems as they relate to saddles and component parts.—DIXON LUBRICATING SADDLE CO., Bristol, R. I.

435. DOUBLE DECK TWISTERS — Bulletin describes Jumbo (8 oz. to 16 oz. headless or take-up spool packages) and Acme (up to 16 oz. packages) models for high speed twisting of silk, rayon, nylon, etc., to finest deniers.—U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

436. MAINTENANCE INFORMATION FOR YOUR SCOTT TESTER—Booklet containing maintenance data for calibration of Scott Testers, clamps for testers, gear-box lubrication, and recording.—SCOTT TESTERS, INC., Providence, R. I.

437. SPINDLE TAPE LACING EQUIPMENT—Circular No. 54 illustrating and describing the Clipper method of joining spindle tapes.—CLIPPER BELT LACER CO., Grand Rapids 2, Mich.

438. HEADLESS PACKAGE TWISTER ELIMINATES REDRAWING — Literature shows high-speed Face Drive Twister for accurately building tapered or straight-end headless packages which go direct to quilling or warping without redrawing.—U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

445. ROLLER BEARING SPINDLES—Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full-floating footstep bearing is pictured in cut-away views, and its advantages are described. — THE MARQUETTE METAL PRODUCTS CO., 1145 Galewood Ave., Cleveland, Ohio.

446. WINDING MACHINES — Principles and Practices is the title of Bulletin No. 339, Part 2 on the No. 44 Roto-Coner is profusely illustrated with exploded view drawings with charts and tables relative to drum winders.—UNIVERSAL WINDING CO., Providence, R. I.

447. CONE WINDER — Form A95 describes the Foster Model 102 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply.—FOSTER MACHINE COMPANY, Westfield, Mass.

453. EVENNESS TESTER — Folder explaining how this Tester takes the guess out of quality control and each processing step from carding through spinning.—USTER CORPORATION, Charlotte, N. C.

454. CARD AND PICKER BEARINGS — Four-page, two-color folder which describes this manufacturer's ball and roller bearings for cards and pickers.—SOUTHERN STATES EQUIPMENT CORP., Hampton, Ga.

455. PIN DRAFTS—Catalog describing the use and features of the machine, what it can do to cut costs in the processing of natural and synthetic yarns, along with specifications and installation data.—WARNER & SWASEY CO., 5701 Carnegie Ave., Cleveland, Ohio.

458. CONICAL RINGS AND FLYERS — Special data available on the Herr conical rings and fiyers.—HERR MANUFACTURING CO., INC., 318 Franklin St., Buffalo 2, N. Y.

459. TENSION CONTROLS — Folder describing tension compensation and automatic tension controls. Three models — Standard, Warp, and Double Disc Fully described with specific application.—WALTER KIDDE & CO., INC., Belleville 9, N. Y.

461. PRECISE WIND MACHINE — Form A-92 describes the Foster Model 75 widely used for winding straight or pineapple cones and tubes of rayon, nylon and other filament yarns.—FOSTER MACHINE COMPANY, Westfield, Mass.

462. TEXTILE MACHINERY PARTS CATALOG—A 24-page illustrated catalog describing the complete line of Dayco and Thorobred textile machinery parts including Cots, Aprons, Loop Pickers, Lag Straps, etc.—DAYTON RUBBER CO., Dayton, Ohio.

466. CONDENSED LISTINGS — 8-page pocket sized booklet listing by plan flow the machinery and mill supplies available. Designed to help purchaser in grouping his orders to greatest advantage.—ATKINSON, HASERICK & CO., Boston, Mass.

467. CARD CLOTHING.—8-page booklet by Benjamin Booth Company describes Strip-O-Matic Card Clothing and its advantages. Write: Benjamin Booth Company, Allegheny Avenue & Janney Streets, Philadelphia, Pennsylvania.

468. BALL BEARING TOP ROLLS — Bulletin features top roll for Spinning and Roving Frames with sealed lubrication, interchangeable units, low-cost servicing and precision quality. — Write FAULTLESS CASTER CORPORATION, Textile Equipment Division, Evansville 7, Indiana.

469. SHORT CUT TO STAPLE FIBER SPINNING—Color brochure shows the ten steps in operation of the Turbo Tow Stapler, gives technical details and diagrams. — Write TURBO MACHINE COMPANY, Lansdale, Pa.

470. TENSION CONTROL IN TEXTILES—Booklet describes many applications and advantages of Link Engineerings' "Lod-Caps". Well-illustrated with diagrams and pictures, it gives specifications and capacities. — Write: LINK ENGINEERING COMPANY, 13843 Elmira Avenue, Dept. D, Detroit 27, Michigan.

471. FACTS ABOUT YOUR FLYERS AND SPINDLES. Booklet by Ideal Machine Shops shows how smooth Flyer and Spindle operation can help produce higher and more efficient output, good quality yarn, minimum wear, and larger bobbins.—Write: IDEAL MACHINE SHOPS, Bessemer City, North Carolina.

473. CUSTOM MADE THREAD GUIDES—Illustrated booklet describing uses and physical properties of the "AlSiMag" line of Thread Guides. Advantages fully discussed with picture and specifications of each type.—AMERICAN LAVA CORP., Chattanooga 5, Tenn.

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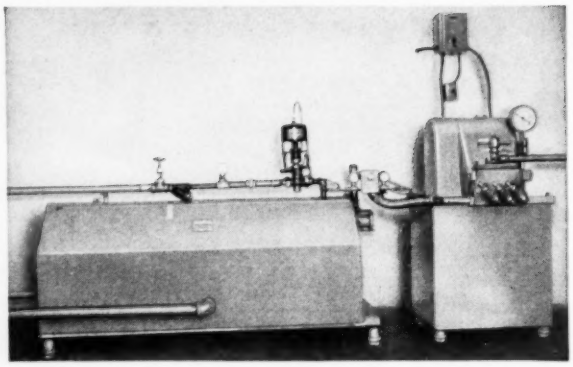

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503. WEAVER'S KNOTTER — A catalog on the Boyce Weaver's Knotter giving a few instructions as to its use, recommendation as to the proper type knotter for the various types of yarns, and the spare parts that go to make up the knotter.—A. B. CARTER, INC., Gastonia, N. C.

504. LOOM SUPPLIES — Literature describing complete line of straps, strapping, pickers, dobby cords, sticks, binders, bumpers, brake lining and allied products.—E. H. JACOBS NORTHERN DIV., THE BULLARD CLARK CO., Danielson, Conn.

507. VARIABLE SPEED SLASHER DRIVE — Reeves bulletin G-503 describes their Servo-Control slasher drive which automatically controls tension from creel to beam, and which controls the stretch in the slasher.—REEVES PULLEY CO., Columbus, Ind.

508. LOOM PRODUCTION CHARTS — Convenient celluloid card showing yards per loom per week of 40 hours at various loom speeds. — RALPH E. LOPER CO., Greenville, S. C.

509. MULTI-MOTOR SLASHER DRIVES—Booklet designed to bring the descriptive information on multi-motor slasher drives up to date, and emphasize the improvement in the drive through the use of Rototrol for the control of winding tension.—WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

510. THE ROMANCE OF PRAIRIE GOLD—Attractive illustrated book which tells the story of corn and the uses of corn products to industry.—CORN PRODUCTS SALES CO., 17 Battery Place, New York, N. Y.

511. ALUMINUM BEAMS—Catalog No. 1-21 describes Hayes magnesium and aluminum specialties for the textile industry. Illustrates this company's beams that are one-third the weight of conventional types.—HAYES INDUSTRIES, INC., Jackson, Mich.

512. LOOM PRODUCTION CALCULATOR—Handy pocket slide rule available for computing per cent efficiency of a loom. Simply set operative hours and loom speed and the per cent efficiency can be read on the side opposite the pick counter reading. — VEEDER-ROOT, INC., Textile Counters Div., Hartford 2, Conn.

517. LOADING SYSTEM—Bulletin 417, on pneumatic loading system for Saco-Lowell slasher size box squeeze rolls, contains installation photo, features, specifications, and prices. — THE FOXBORO COMPANY, Foxboro, Mass.

518. NIAGARA TWIST-SETTER — Folder describing the revolutionary Niagara Twist-Setter which has no moving parts. This yarn is sprayed from all sides to afford maximum economy. — SEYDEL-WOOLEY & CO., 748 Rice St., Atlanta, Ga.

521. STEEL WARP BEAMS—20 page Catalog No. 45 illustrating Standard and Special Purpose Warp Beams for the weaving industry, both broad-loom and narrow fabrics. Also Textile Machinery Specialties. — MILTON MACHINE WORKS, INC., Milton, Pa.

524. JOHNSON WARP SIZES—12 page fully illustrated booklet, describing the 7 cylinder sizer with stretch indicator and finger-tip control of stretch. A point-by-point analysis. — CHARLES B. JOHNSON MACHINE WORKS, Piercy & Holsman Sts., Paterson, N. J.

529. STRAPPING — Looms and harness strapping, complete line. Full information supplied on request. —TON TEX CORPORATION, 16 West 61st St., New York 23, N. Y.

530. ROTARY UNIONS—New catalog shows how to cut costs, get better sealing, on can dryers, slashers, calenders, etc. Catalog No. 500 entitled "Where Good Connections Count."—PERFECTING SERVICE COMPANY, Atando Ave., Charlotte, N. C.

538. HOMOGENIZER IMPROVES SLASHING — Pamphlet by Manton-Gaulin Manufacturing Company shows how mechanical conversion of size by the Gaulin method produces better size. Gives installation pictures and specifications. — Write MANTON-GAULIN MANUFACTURING COMPANY, INC., Everett, Massachusetts, U. S. A.

537. WEST POINT'S HOT AIR SLASHER — Bulletin describes advantages and capacities of new hot air slasher by West Point Foundry and Machine Works. Detailed specification included.—Write WEST POINT FOUNDRY AND MACHINE WORKS, West Point, Georgia.

DYEING, FINISHING CLOTH ROOM

605. CONTINUOUS AUTOMATIC EXTRACTING MACHINE — Folder describing the most efficient method of extracting excess liquid from fibrous materials.—C. G. SARGENT'S SONS CORP., Graniville, Mass.

606. HYDRAULIC POWER UNITS — Literature describing hydraulic unit, motor, pump, reservoir, valving a small compact unit for operating of hydraulic calenders, presses, hydraulic controls, etc.—B. F. PERKINS & SON, INC., Holyoke, Mass.

610. PROCTOR DRYING MACHINERY FOR THE TEXTILE INDUSTRY—Illustrated, descriptive catalog on all types of dryers for raw stock, warps, package dyed and automatic skein yarn. Also includes Pre-Roarding and Automatic Roarding Machines for hosiery.—PROCTOR & SCHWARTZ, INC., 7th and Tabor Rd., Philadelphia, Pa.

615. HIGH PRODUCTION EXTRACTOR FOR RAW STOCK—YARN—HOSIERY — Descriptive bulletin and full information on automatic Twintainer Extractor with bottom-unloading removable baskets. Machine replaces three conventional extractors, lowers labor costs.—FLETCHER WORKS, INC., Philadelphia, Pa.

616. FINISHING DRIVES—32 page booklet covers complete drives Westinghouse has engineered for the textile finishing industry. Describes all types of finishing ranges discusses advantages of Westinghouse drives for these installations. "Packaged" drives for batch processes covered.—WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

617. AUTOMATIC CONTROL SYSTEM FOR CONTINUOUS BLEACHING—Illustrated folder describes the new method of controlling the temperature, pressure, and liquid level in the continuous bleach operation.—TAYLOR INSTRUMENT COMPANIES, Rochester 1, N. Y.

620. REGENERATION OF ZEOLITE WATER SOFTENERS — Booklet explains advantages of International's Lixate Process in regeneration of zeolite water softeners. Shows how it cuts costs and does a better job.—Write: INTERNATIONAL SALT COMPANY, INC., Scranton, Pennsylvania.

622. DYEING OF ORLON, DACRON, AND ACRILAN — Three booklets by Sandoz deal with Orlon dyeing, fastness of Dacron, and general preparation of Acrilan goods for dyeing.—Write: SANDOZ CHEMICAL WORKS, 61-63 Can Dam Street, New York 13, New York.

623. SELVAGE GUIDER—The Marshall and Williams positive overfeed and selvage guider is described in a brochure as being developed to meet the most modern requirements of the textile finishing industry. Full description, pictures and advantages, discussed. — MARSHALL AND WILLIAMS CORPORATION, 46 Baker Street, Providence 5, R. I.

632. LUG STRAP WASHERS—Series 1-C illustrated bulletin detailing right and wiring application and use of washers.—E. H. JACOBS NORTHERN DIV., Danielson, Conn.

635. TWO BURNER VERTICAL SINGER—Described as consisting of adjustable tension device, air guiders (optional), guide rolls to guide cloth between the burners, and solenoid-controlled pneumatic-cloth deflector to move cloth from burners when stopping and throws in electrically when starting. Pictured and fully discussed.—BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass.

641. PACKAGE DYEING — Machines for dyeing extracting, and drying yarn in package and on beams described in illustrated booklet on the theory of package dyeing and equipment for this process.—SMITH, DRUM & CO., Philadelphia 33, Pa.

651. IMPROVED SHEARING OPERATIONS — The Slack Selvage Eliminator Bulletin describes this Mount Hope machine, and discusses the speed-up in shearing operation and the elimination of cutting of the material due to slack selvages.—MOUNT HOPE MACHINERY COMPANY, 15 Fifth St., Taunton, Mass.

DYESTUFFS, CHEMICALS, SOAPS . . .

700. COTTON FINISHING OILS — New booklet by Twitchell devoted to finishing Sanforized Fabrics contains such specific data as re-wetting speed, imparted softness, resistance to yellowing, and "balance" of these properties. — Write: EMERY INDUSTRIES, INC., Dept. 5, Carew Tower, Cincinnati 2, Ohio.

702. DEFOAMERS—Bulletin AA-2 lists uses and properties of Antifoam A, which can be effectively used at 10 to 200 ppm in most industrial applications. Emulsions available, improve dispersability in aqueous systems.—DOW-CORNING CORP., Midland, Mich.

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706. RHONITE RESINS — Booklet describes the Rhonite Resins as being developed to impart handle to fabrics ranging from stiffness through full resiliency to silky suppleness, depending on the demand of the season. Full information and uses given.—ROHM & HAAS COMPANY, Washington Square, Philadelphia, Pa.

708. CAUSTIC SODA BOOKLET — Deals with manufacture, its properties, methods of handling and storage, technical data, etc.—ALKALI SALES DEPT., THE DOW CHEMICAL CO., Midland, Mich.

711. PIXOL — Recommended as a leveling and penetrating agent, especially for the dyeing of wool, described as being useful as a finish for worsted piece goods. Prevents bronziness in sulphur dyeing on cotton.—AMERICAN ANILINE PRODUCTS, INC., 50 Union Square, New York, N. Y.

713. LIOVATINE ED — Vat dyeing assistant increasing penetration and level dyeing with maximum yield of color.—SANDOZ CHEMICAL WORKS, 61 Van Dam St., New York City.

714. NEW SODA ASH BULLETIN—64-page edition contains both new material and revisions of previously used data covering the subject. Ask for Bulletin No. 5—SOLVAY SALES DIVISION, 40 Rector St., New York 6, N. Y.

715. AQUAROL AND ARKANSAS PRODUCTS—Bulletin on Aquarol water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and yarn, hosiery processing.—ARKANSAS CO., INC., Newark, N. J.

716. WIDE RANGE SCOURING AND WETTING AGENT—4-page folder describing Houghton's concentrated non-ionic, synthetic detergent and wetting agent, Cerfak 1300, usable over entire pH range for efficient scouring and wetting.—E. F. HOUGHTON & Co., Philadelphia 33, Pa.

725. VAT DYEING OF WOOL—Write for Calco Technical Bulletin No. 797 outlining fundamental dyeing procedure, and explaining new advances in the technology of wool dyeing and finishing.—CALCO CHEMICAL DIVISION, AMERICAN CYANAMID CO., Bound Brook, N. J.

728. UNIQUE YARN AND DYEING SERVICE—

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745. **RAPIDASE FOR DESIZING** — Bulletin explaining in detail the properties and characteristics of Rapidase.—WALLERSTEIN CO., INC., 180 Madison Avenue, New York 16, N. Y.

749. **WATER SOLUBLE GUMS**—Booklet giving the origin, gathering, marketing and uses of water soluble gums. This booklet No. 23 is beautifully illustrated, and is one of the few treatises on the subject. —JACQUES WOLF & CO., Passaic, N. J.

753. **TRITON X-100**—Booklet available describing this highly concentrated detergent and wetting agent, main uses fully discussed and chemical properties brought out.—RHOM & HAAS COMPANY, Philadelphia 5, Pa.

762. **ONYX TECHNICAL DATA SHEETS**—Two new data sheets describing the use, advantages, and applications of Xyno Resins S 60 and Xyno Resin 562—ONYX OIL & CHEMICAL COMPANY, Jersey City 2, N. J.

765. **HOSIERY FINISHES AND FORMULAS**—Attractive new booklet describing the Amalgamated line of hosiery finishes and given numerous finishing formulas.—AMALGAMATED CHEMICAL CORPORATION, Philadelphia 34, Pa.

766. **DU PONT PEROXIDE BLEACHING SYSTEMS**—New book illustrating and describing this continuous peroxide bleach system. Layouts and other information included.—E. I. DU PONT DE NEMOURS & CO., ELECTROCHEMICAL DEPT., Wilmington, Del.

769. **SURFACE TENSION DEPRESSANT**—The Booklet, "Mercerizing and Alkameroe—The Ideal Dry" which can be used as a wetting agent; a dye leveling agent, a penetrant in package dyeing.—HART PRODUCTS CORP., 1440 Broadway, New York, N. Y.

774. **ROYCE TEXTILE CHEMICALS**—This booklet briefly describes the leading Royce products for textile processing, printing, dyeing and finishing.—ROYCE CHEMICAL COMPANY, Carlton Hill, N. J.

KNITTING . . .

801. **THE WILDMAN SINGLEHEAD FULL-FASHIONED HOSIERY MACHINE**—Literature on request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

805. **REINER CREELS**—Catalog describing these Single type, magazine, and truck creels for all requirements in the knitting and weaving industry.—ROBERT REINER INC., Weehawken, N. J.

818. **FORGED HEAD ALUMINUM BEAMS**—Bulletin 49-A shows new beam capable of holding high yardage of nylon and rubber warps, with specifications. Also describes permanent mold aluminum tricot and section beams — MILTON MACHINE WORKS, INC., Milton, Pa.

822. **HIGH SPEED JERSEY CIRCULAR MACHINE**—Booklet describing Supreme's line of high production, body-size and large diameter jersey machine, Model MJ, for underwear and outerwear.—SUPREME KNITTING MACHINE CO., 105 Johnson Ave., Brooklyn 6, N. Y.

828. **THE KIDDE KNITTER**—Bulletin describing this newest in Raschel-type warp knitting machines and higher production attained with it—KIDDE MANUFACTURING CO., INC., Forrand St. Bloomfield, N. J.

831. **CIRCULAR KNITTING MACHINES**—Brochure pictures and describes the products which can be made on the Brinton small diameter circular knitting machine. Examples of the variety of products which can be made are pictured and the machines described. — H. BRINTON COMPANY, Kensington Ave. and "M" St., Philadelphia, Pa.

SEWING MACHINES . . .

916. **THE SUPERLOCK**—Bulletin 828 describing and illustrating the W & G Superlock overseaming machine.—WILLCOX & GIBBS SEWING MACHINE CO., 214 W. 39th St., New York 18, N. Y.

924. **BUTT-TACKING SEWING MACHINE** — Booklet describes an operating installation of the Merrow single thread butt-tacking sewing machine. Gives performance data, and advantages of butt-tacking. — Write: THE MERROW MACHINE COMPANY, 28 Laurel Street, Hartford, Connecticut.

MATERIALS HANDLING . . .

1003. **CASTERS AND WHEELS**—192 pages, describing casters and wheels suitable for all types of industrial applications. Every mechanical engineer and purchasing agent should have this. DARNELL CORP., LTD., Long Beach 4, Calif.

1004. **PITTSBURGH COLLAPSIBLE CARGO-TAINERS**—Stacked they lock in place and permit visible inventory; collapsed they nest in small area. Base permits entry by all types of lift trucks. Write for brochure MH-15—PITTSBURGH STEEL PRODUCTS COMPANY, Pittsburgh 30, Pa.

1006. **LANE CANVAS BASKETS**—16 page illustrated booklet describing the Lane line of canvas baskets for textile use.—W. T. LANE & BROTHERS, Poughkeepsie, N. Y.

1007. **OVERHEAD HANDLING EQUIPMENT** — 50 pages of illustrations showing successful applications of monorail systems to meet every kind of handling problem.—THE AMERICAN MONORAIL CO., 13106 Athens Ave., Cleveland 7, Ohio.

1008. **CASTERS AND WHEELS**—An illustrated booklet with complete specifications showing a complete assortment of Cotton Textile Casters.—THE COLSON CORP., Elyria, Ohio.

1010. **CONVEYOR KEY BOOK**—A guide to production "step-ups" now possible with modern conveying. Shows time-and-effort savings. Well illustrated with photos showing plant layouts and sketches showing where, how and why different types of conveyors are used for maximum results.—LOGAN CO., 1115 Franklin St., Louisville, Ky.

1011. **TEXTILE TRUCKS** — Booklet describing doff boxes, frames and trucks, yarn, waste, platforms, conditioning, steep lap fiber utility trucks etc. Uses and description.—EXCEL TEXTILE SUPPLY CO., Lincolnton, N. C.

1012. **"SERVES YOU RIGHT"** — is theme of succint review of fork-lift trucks, powered hand trucks and industrial towing tractors, with emphasis on proper planned materials handling systems, which can be obtained from CLARK EQUIPMENT CO., Industrial Truck Div., Battle Creek, Mich.

1013. **"A STORY OF TRACTOR TOOLS AND THEIR USE"**—Comprehensive illustrated guide effectively present in cartoon-style the many principal uses for this type of Equipment. — HYSTER CO., 2903 N.E., Clackamas St., Portland 8, Ore.

1025. **ELECTRIC HOISTS AND CRANES**—Booklets describing a complete line of Electric Overhead, Cab and Floor-Operated Traveling Cranes, and a similar complete line of Electric Hoists. All fully discussed with pictures and engineering diagrams.—SHEPARD NILES CRANE & HOIST CORP., Montour Falls, N. Y.

1027. **SINGLE-BEAM CRANES**—Bulletin No. 130 describing and illustrating the single beam type of overhead traveling crane.—SHEPARD NILES CRANE AND HOIST CORP., Montour Falls, N. Y.

1029. **ELECTRICAL INSULATING MATERIALS**—Bulletin G.F.-50 describes 5 high-strength plastics: Diamond Vulcanized fiber; Vulcoid, A C-D dielectric material; Dielecto, a laminated thermosetting plastic; Celoron, a fabric-base molded plastic; and Micabond, mica in most usable form. Full information on each in forms available.—CONTINENTAL-DIAMOND FIBRE COMPANY, Newark, Dela.

1031. **MOTOR-DRIVEN TROLLEY HOISTS**—12-page illustrated booklet describing Robbins & Myers motor-driven trolley hoists. Capacities from 1000 to 20,000 pounds. Bulletin 805-A.—ROBBINS & MYERS INC., Hoist & Chain Div., Springfield, Ohio.

MISCELLANEOUS . . .

1101. **AUTOMATIC BOBBIN REFINISHER**—A descriptive bulletin illustrating and describing method of refinishing throwing bobbins on a production schedule.—J. M. NASH COMPANY 2300 N. 39th St., Milwaukee, Wis.

1102. **BALING PRESSES** — An illustrated folder describing this manufacturer's complete line of balers for all materials. Both Downstroke and Upstroke models.—ECONOMY BALER CO., Ann Arbor, Mich.

1103. **UNBRAKO SCREWS** — Illustrated 16-page booklet No. 570 gives data on Unbrako hollow set screws, with knurled point, self-locking features. Includes miscellaneous screw and locking nut data.—STANDARD PRESSED STEEL CO., Jenkintown, Pa.

1107. **AUTOMATIC QUILL POLISHER**—Bulletin describes production machine for refinishing loom bobbins. Tells how quills can be kept in perfect condition at minimum labor cost.—J. M. NASH CO., 2360 N. 30th Street, Milwaukee 10, Wis.

1108. **FABRICATION OF U. S. STAINLESS STEELS**—136-page book covering use of stainless steel in textile equipment from cutting to cleaning. Includes corrosive-resistance tables for chemicals.—CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh, Penn.

1110. **CUTTING MACHINES**—A collection of specification sheets and general descriptive matter covering cutters for thread waste, staple, fiber, etc., complete description and uses.—TAYLOR-STILES & CO., 21 Bridge St., Riegelsville, N. J.

1111. **BRUSHES**—A 26-page booklet is now available which describes and illustrates this manufacturer's line of brushes for the textile industry.—GASTONIA BRUSH COMPANY, Gastonia, N. C.

1112. **THE RANDOM WEB PROCESS**—Bulletin No. 101 describes the Rando-Webber and Rando-Feeder machines, and discusses the origin and development of the Random Web process which produces a non-oriented web suitable for processing into felts, wadding, heavy mats and non-woven fabrics on a continuous basis. Engineering data and cut-away diagrams.—CURLATOR CORPORATION, Textile Division, 565 Blossom Rd., Rochester, N. Y.

1115. **TEXTILE WRAPPING MACHINES** — Brochure describing automatic wrapping machines for various types of textile products, including the new Hayssen V-Type Underfold, most protective package made. — HAYSSEN MANUFACTURING CO., Sheboygan, Wisconsin.

1122. **BALING PRESSES** — Bulletins available describing this company's line of motor-driven and hydraulic baling presses for finished-goods, textile fibers, wool, and waste of all kinds.—LOGEMANN BROTHERS CO., 3150 West Burleigh St., Milwaukee, Wisc.

1123. **CHROMIUM PLATING** — New booklet tells how Walhard engineered hard chromium plating service works for industry. Walhard's capacity to produce, controlled quality, and economical operation are discussed along with pictures of the operations.—WALTON AND LONSBURY, Attleboro, Mass.

AUGUST, 1953

Please send, without obligation, additional information on New Equipment and booklets described (give Key numbers) .....

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Please send more information on advertisements (give Page numbers)

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Address .....

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Company Name .....

City ..... State .....

◀ Handy Return Card

USE THIS OPPORTUNITY TO INFORM YOURSELF OF CURRENTLY AVAILABLE LITERATURE DEALING WITH MACHINERY, EQUIPMENT AND SUPPLIES FOR TEXTILE MILLS, FILL OUT THE ATTACHED CARD TODAY.

SUPPLIERS News

WHAT THEY ARE DOING

Maxwell Ferguson, formerly with Riegel Textile Corp., is now in the technical sales department of **Allied Chemical Corp.,** National Aniline Division, Atlanta, Ga.

Lee S. Appleton and Edward K. Morton have been appointed to the New Haven and Boston district offices, respectively, of **Allis-Chalmers Manufacturing Co.,** as sales representatives.

The New Orleans district office of **Alvey Conveyor Manufacturing Co.** has moved to larger quarters at 302 Jahncke Building, 816 Howard Avenue. Harold L. Block is district manager.

The new address of the southern sales office of **American Paper Tube Co.** is Suite 2S, Calhoun Towers, Greenville, S. C.

The **American Viscose Corp.** has established a $500 scholarship to be awarded to a senior-year student at the School of Textiles, N. C. State College. The school scholarship committee will make the selection on the basis of scholastic achievement, leadership, personal characteristics, and potential executive ability. Harry P. Kelley was recently elected vice-president for the National Society for Business Budgeting. John Reid has resigned as head of the acetate sales division of the firm's Charlotte, N. C. office. John H. Kemp, formerly with Reeves Bros., Inc., is now in the converting relations department which administers the firm's Avcoset program.

Bertram J. Garceau, with the product and process development section since 1948, is now assistant research director of **Arnold Hoffman & Co., Inc.**

Ralph K. Gottshall was recently elected president of **Atlas Powder Co.,** succeeding Isaac Fogg, now chairman of the board. Mr. Gottshall is also chairman of the executive committee. W. G. Frome has retired as vice-president and director after 43 years in the explosives industry. D. J. C. Copps, who succeeded Mr. Frome in February as general manager of the explosives department, was elected to the board and to the executive committee.

Leo W. Rainard and Edmund S. Lamont, both of whom were associated with Alexander Smith, Inc., have joined the "Everglaze" service department of **Joseph Bancroft & Sons Co.** Both will be actively involved in the research, development, and extension of the "Textralizing" process, recently licensed to Bancroft by Alexander Smith, Inc., on an exclusive basis.

C. Kerns Batson has been appointed southern sales and technical representative for **Crown Chemical Corp.** His territory will include South Carolina, Georgia, Alabama, and Tennessee.

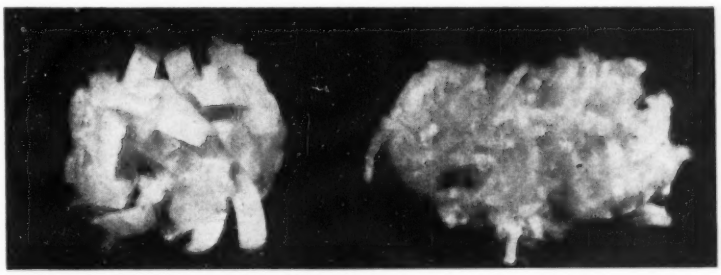
Mr. Batson

Edward T. Taws, founder of the Pennsylvania & Delaware Ribbon Companies, Inc., has been elected president and director of the **H. Brinton Co.**

The Wheelco Instruments division of **Barber-Colman Co.** has announced the addition of the following engineers to its sales and service organization: Chicago, Robert Unger; Detroit, Harold L. Dirkers and Leonard V. Bloom; New York, William E. King; Boston, Lawrence S. Holbrook and Robert Hemman; and Rockford, Scott R. Babcock and Clyde Person.

Harry B. McClure was recently appointed executive vice-president of **Carbide and Carbon Chemicals Co.,** a division of Union Carbide and Carbon Corp. He has been vice-president since 1944. Carl A. Setterstrom was made general manager of the textile fibers division.

George S. Rogers, Buffalo district,



Cut: Synthetic Fibers for Staple with efficient

TAYLOR-STILES STAPLE CUTTER

Shown above is nylon sliver cut to ¼" lengths (left) and 1/6" lengths (right).

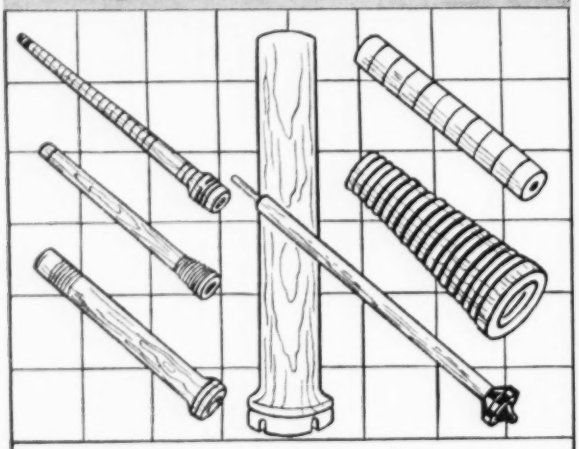
Shown left, is a Taylor-Stiles staple cutter, cutting nylon sliver to staple length.

Taylor-Stiles cutters are made for every textile cutting purpose. Used by leading mills everywhere.

Write for description of the Taylor-Stiles Textile cutter for your specific requirements.

TAYLOR-STILES & COMPANY
204 BRIDGE STREET
RIEGELSVILLE, NEW JERSEY

MONTICELLO BOBBINS
"Engineered For Service"



FROM CARD ROOM BOBBINS TO OUR LATEST
PATENTED PLASTIC BASE SKEWER
"ENGINEERED FOR SERVICE"
WE CAN EXTEND THE LENGTH OF YOUR
BOBBINS GIVING YOU A
COMPLETE NEW TOP BEARING

MONTICELLO
BOBBIN COMPANY
MONTICELLO, GEORGIA

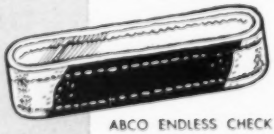
The ONLY manufacturer of Card Room Bobbins in the South

REDUCE COSTS AND INCREASE PRODUCTION WITH OUR ABC HAIRON CHECK STRAPS

REGULAR

ABC HAIRON CHECK STRAPS last longer by actual Mill Tests. As much as 2 to 4 times longer than competitive straps.

ENDLESS



ABCO ENDLESS CHECK STRAPS. Two-ply thick, cemented and stitched for long, dependable service and less stretch.

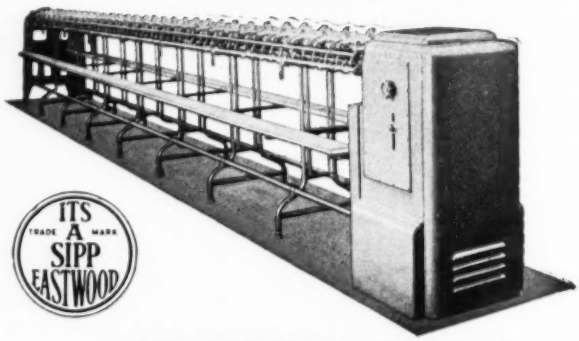
CURVED

ABC HAIRON CURVED CHECK STRAPS. Cut from the same foreign Hairon Leather as our regular ABC HAIRON CHECK STRAPS.

ATLANTA BELTING COMPANY
508-510 WHITEHALL ST., S.W., ATLANTA, GEORGIA

For Perfect Spools at Higher Speeds-

SIPP-EASTWOOD
WINDER-REDRAW



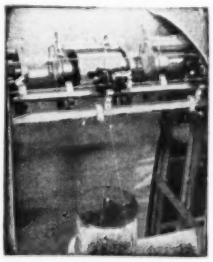
ITS A TRADE MARK SIPP EASTWOOD

- **WITH SELF-THREADING TENSION**
- **SELF-OPENING SPINDLELESS ATTACHMENT**
- **FULL SPOOL STOP MOTION**

Deliberately designed for perfect spools at higher speeds and greatest possible automatic operation. This brand new winder-redraw requires a minimum of attention during operation and is easy to clean and maintain.

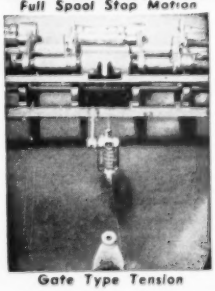
FEATURES:

1. **Washer type self-threading tension** fastened to traverse rail is easily adjustable and quickly cleaned. Eliminates all threading operations.
2. **Gate type tensions** available with self-threading Alsimag guides for nylon.
3. **Full spool stop motion** prevents overrun bobbins.
4. The drive and traverse mechanism is enclosed in one complete unit and is lubricated by a circulating oil bath.
5. Traverse adjustment is independent on each side of machine and can be adjusted from 3½" to 7" traverse without changing cam.
6. Speed changes are readily accomplished through the use of a handwheel.
7. Winds per stroke easily adjustable.
8. Single or double drive self-opening spindleless brackets are available.
9. Easily changed for "S" or "Z" twist by use of reversing switch.
10. Tachometer available for easy speed readings.



Self-Threading Tension

Full Spool Stop Motion



Gate Type Tension

Write for Descriptive Folder

SIPP-EASTWOOD
CORPORATION
Producers of Superior Equipment for Textile Processing
45 KEEN STREET, PATERSON, N. J.

Burlington Engineering Remodels

Burlington Engineering Co., Inc., has recently completed the remodeling of its plant in Graham, N. C. Included in the construction program were the addition of 5000 sq ft working space, complete rebuilding of the front to allow more office space, and a pilot plant for testing and experimentation. This firm, incorporated in 1946, is said to be the only manufacturer of piece goods dyeing equipment in the entire South.

SUPPLIERS *News* — WHAT THEY ARE DOING

William T. O'Mara, Buffalo district, and Samuel Phipps, St. Louis district, recently retired from the industrial abrasive sales division of **The Carborundum Co.** George H. Dennison has replaced Mr. Rogers as district sales manager; William G. Kettner, Jr., was made office manager for the New York district; C. R. Strong was transferred from Chicago to the Peoria, Ill., territory to sell both bonded and coated abrasives; his territory in Wisconsin will be served by F. H. Garske, Jr., A. G. Ott, and J. H. Spehr. M. I. Johnson has been made general salesman and will replace Mr. O'Mara in Buffalo; G. A. Tanner was assigned to the territory formerly covered by Mr. Phipps; H. A. Johnson has been assigned to the South Texas coated abrasive territory, replacing S. E. H. France, now in New York; and H. W. McGarr was transferred from DesMoines to the Chicago district. His territory will be covered by R. D. Hulben and C. R. Strong.

Russell L. Lawson has left Utica Knitting Co. to become executive vice-president of **Central Scientific Co.**

Central Yarn and Dyeing Co., Gastonia, N. C., has announced that it is now package dyeing in a full range of colors filament Dacron yarn with producer's twist.

Collins Bros. Machine Co. has taken over all the new and replacement parts for the Luther thread dressers and cloth stretchers of the Charles A. Luther Co., Central Falls, R. I., and is filling Luther's outstanding orders.

Additional chlorine-caustic soda producing units have been placed in operation at **Columbia-Southern Chemical Corp.'s** plants located at Natrium, W. Va., and Corpus Christi, Texas. Columbia-Southern is a wholly owned subsidiary of Pittsburgh Plate Glass Co.

John Withrow has been appointed by **Cone Mills Inc.,** to handle industrial fabrics merchandising for the Dwight division of Cone Mills Corp. He will be assisted by Daniel V. Eberhard. Mr. Withrow succeeds R. P. M. Eagles, deceased.

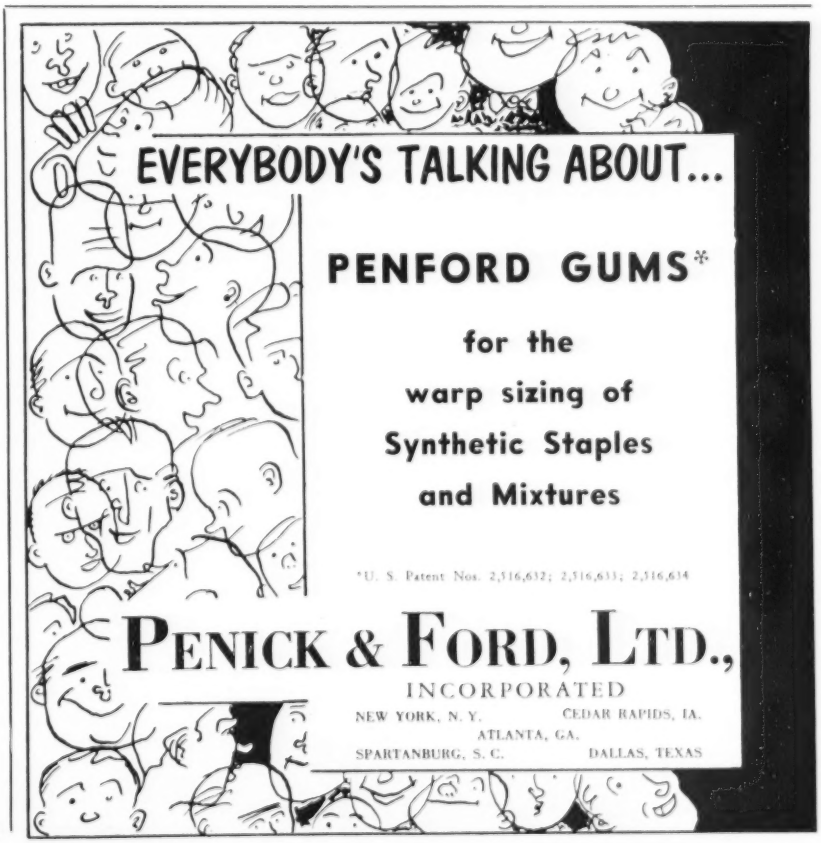
Olan R. Thomas, with the firm since 1941, has been made advertising and sales promotion manager for **The Continental-Diamond Fibre Co.**

Diamond Alkali Co. has announced that more extensive, centralized, storage and handling facilities are now in operation at its Jersey City silicate plant. 24,000 additional sq ft storage space have been provided.

Feedrail Corp. has appointed Elmer W. Rasmussen to succeed F. C. Picker, retired, as representative in certain counties of Florida. His offices are in Court Square Building, Clearwater, Fla.

Foster Machine Co. recently held the sixth annual meeting of its Twenty-Five Year Club. Its full membership comprises 76 men and women; veterans are James T. Hill, 54 years, and John E. MacBrian, 49 years.

The Foxboro Co. has announced the organization of a Mexican affiliate, Graficas e Instrumentos, S. A., to strengthen its international serv-



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You can rely upon U. S. for prompt traveler delivery

Call the nearest U. S. Man for Traveler Problem answers and test samples

U. S. RING TRAVELER CO.

HOME OFFICE & FACTORY: PROVIDENCE, R. I.
SOUTHERN OFFICE & WAREHOUSE: GREENVILLE, S. C.

"A STYLE AND SIZE FOR EVERY TEXTILE FIBER!"
Write, wire or phone nearest office.

W. P. VAUGHAN, W. H. ROSE—Greenville, S. C.—Box 1048—Phone 3-0915
O. B. LAND—Athens, Ga.—Box 1187—Phone 478
L. H. MELLOR, JR.—Mid-Atlantic States—123 Treaty Rd.—Drexel Hill, Pa.—Phone Hilltop 6-1563
H. R. FISHER—Concord, N. C.—Box 83—Phone 2-8930
H. J. SMITH—Providence—Box 1187—Gaspee 0100

Kali KALIFIX

....a new low-cost synthetic Dye Fixing Agent for yarn, piece goods, tops and raw stock, where improved color fastness is desired.

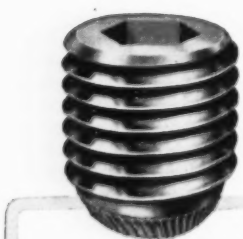
KALIFIX is applied in the last rinse after dyeing. Conventional dyeing and drying equipment are used—no special curing or aftertreatment required.

***Special Features of* KALIFIX:**

- Will not cause change in shade of dyed fabrics.
- No deleterious effect upon cellulose fibers or rubber yarns (i. e. elastic tops of hosiery).
- Permanently fixes the dyestuff and prevents bleeding or color migration on items daily saturated with water (i.e. bath mats).
- Tubular knit goods, cotton and rayon hosiery show marked improvement re fastness to water, acid and alkaline perspiration, and laundering.

Write for complete details.

KALI MANUFACTURING COMPANY
Manufacturing Chemists
427 Moyer Street Philadelphia 25, Pa.



UNBRAKO®

self-locking
CUP POINT

The point that won't work loose

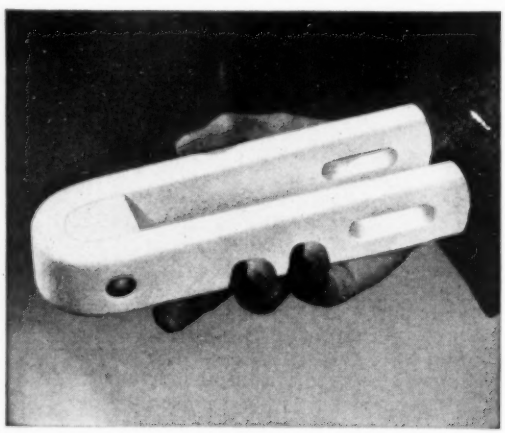
Unique, counterclockwise knurls on the cup point make these UNBRAKO Socket Set Screws self lockers, prevent them from loosening. UNBRAKO Self-Locking Set Screws stay tight even in poorly tapped holes, reduce maintenance costs and cut production losses. Standard sizes—#4 to 1" in a full range of lengths—are available for prompt delivery from your UNBRAKO industrial distributor. Write for UNBRAKO Standards. SPS, Jenkintown 34, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

UNBRAKO SOCKET SCREW DIVISION **SPS**
JENKINTOWN PENNSYLVANIA

The HARRIS "Heavy Duty" Lug Strap—

"Tests have proven very satisfactory"



Pick Arm Lug Straps
Leather and Fibre Straps
Harris Loom Cord
"Wirecore" Loom Cord
Improved Dobby Bars
Dobby Pegs

RICE DOBBY CHAIN CO.

Millbury, Massachusetts
Southern Representatives
R. E. L. HOLT, JR. ASSOCIATES Jefferson Bldg. Greensboro, N. C.

ice to users of industrial instruments.

The Franklin Processing Co. was recently presented with the Premier Award in the 1953 Creative Competition of the National Advertising Agency Network. It was made for the firm's product advertising in non-merchandising business publications. These ads appeared in the pages of TEXTILE INDUSTRIES.

Pittsburgh Coke & Chemical Co. has appointed Ernest A. Zillessen sales representative for its fine

Mr. Zillessen

chemicals division in northern New Jersey and parts of North Carolina. Mr. Zillessen was recently with Silk City Chemical Co.

Charles E. Brady has been added to the sales staff of **N. T. Gates Co.** and will represent the company in the Delaware Valley area.

J. Robert Bonnar, with the firm since 1935, has been promoted by **General Dyestuff Corp.** to sales manager, dyestuff division. Henry F. Herrman was made general market manager of that division; and Donald E. Marnon was appointed manager of the dyestuff technical department, the post formerly held by Mr. Bonnar. *** A total of 30 paintings and drawings were entered in the eighth annual exhibition by employees of the **General Dyestuff Corp.** and of **General Aniline Works.** Prizes were awarded on the basis of ballots cast by visitors to the show, first prize going to F. R. Fink and the second honors to D. A. Shiraeff.

A direct-current motor and generator department has been established at **General Electric Co.** Oscar L. Dunn was appointed general manager of the new department, which will assume all duties and responsibilities of the firm's former D-C motor and generator planning study.

The Chemical division of **General Mills** has appointed Abner C. Hopkins, Jr., director of chemical sales.

Plant expansions totaling approximately $5,500,000 are planned by the **Goodyear Tire & Rubber Co.,** which will include an addition to the Chemigum plant at Akron, and a new plant and additional equipment in Niagara Falls.

Wolford M. Ewalt was recently made special products supervisor in the Niagara sales office of **Hooker Electrochemical Co.** John T. Walmsley has been promoted to the Chicago and midwest area as a salesman, with headquarters at One North LaSalle St., Chicago.

Hunt Loom & Machine Works, Inc., has announced that already it has received substantial orders for its "Model H-B-3" looms, production of which has just been started. The looms are said to be quite revolutionary in design, created by the Borden Mills organization.

The corporate name of **Industrial Tape Corp.** has been changed to **Permacel Tape Corp.**

Scholarships at six liberal arts and technical colleges have been established by **Interchemical Corp.** In each case the grant is being made on the basis of demonstrated scholastic achievement, character, and leadership potential. Colleges affected are

SUPPLIERS News
WHAT THEY ARE DOING

Case Institute of Technology, Clemson Agricultural College, Illinois Institute of Technology, Lowell Technological Institute, Polytechnical Institute of Brooklyn, and Rutgers University. These are located near Interchemical factories and laboratories, and offer courses related to the firm's field of activities.

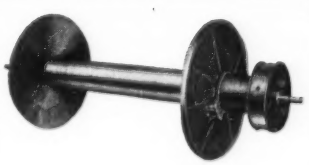
Samuel O. Rose, Burlington, N. C., has joined the **Onyx Oil & Chemical Co.** as southern sales representative

Mr. Rose

to the full-fashioned and circular knit hosiery and hosiery yarn dyeing industries in the Piedmont section. Mr. Rose was formerly with Full Knit

MILTON
A TIME TESTED LINE
Engineered for Production
MILTON WARP BEAMS
for BROAD, NARROW FABRIC, RIBBON, VELVET, CARPET LOOMS

BROADLOOM BEAMS



For C & K Looms (pictured) and Draper Looms (with let-off gear). Steel barrels, cast iron flanges.

RIBBON LOOM BEAMS

Steel barrels, with your choice of adjustable head and fixed shaft (pictured) or fixed head with removable shaft.

GET THE COMPLETE STORY

Write for Catalog 45 (Steel) or Catalog 45-A (Light Metal)

MILTON MACHINE WORKS, INC.
DESIGNERS • ENGINEERS • MANUFACTURERS
MILTON, PENNA.

this steam gun cuts cleaning time by 50%

No tedious brushing or scraping with the scientifically designed Oakite Steam-Detergent Gun. At the mere twist of a valve, it cleans and rinses. Its hot cleaning spray quickly breaks up, floats off the heaviest soil, no matter how hard to get at. Ideal for stripping paint, too.

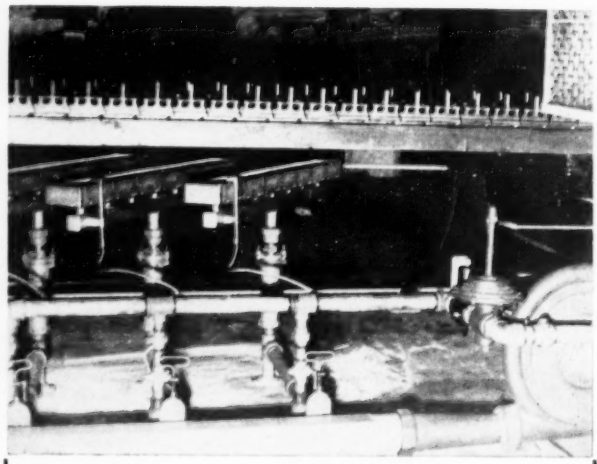
FREE folder describes simple set up using your own steam supply. Call or write Oakite Products, Inc., 26C Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada



RED RAY BURNERS

Installed under open tenter frame for increased drying capacity

Write for Information

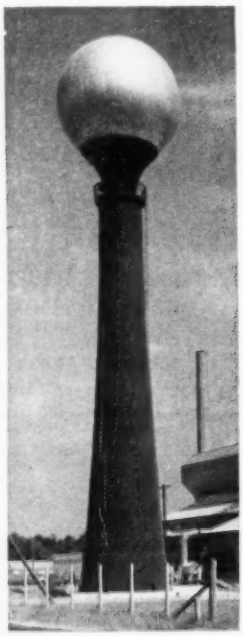
RED-RAY MANUFACTURING CO., INC.

455 W. 45th St. Tel: Plaza 7-5174 New York 36, N. Y.

Spherical Tanks on Tubular Towers

The COLE Spherical Tank on Tubular Tower is unique in its field. We design and erect special tanks of this character. It provides an attractive and serviceable unit—economical to maintain, efficient in service and pleasing in appearance.

Write for special booklet on these modern, welded Spherical Tanks which provide gravity water pressure, and for copy of latest Cole catalog, "Tank Talk."



Established 1854

R. D. COLE MFG. CO.

NEWNAN, GEORGIA

ELEVATED TANKS • VESSELS • CYLINDERS
TOWERS • BINS • STANDPIPES

Better IDENTIFICATION BANDS for your *ROVING CANS*

IDENTIFICATION BANDS OF UNITED ELASTIC WEBBING FEATURE

- the most in service
- a very attractive price
- well-made, firmly-woven construction
- securely sewed laps
- any desired color
- bright, solid, even colors
- fast-to-light, non-fading dyes
- easily recognized at a distance
- easily removed and transferred

If you will specify the can diameter; and the color, width and quantity of bands desired; we will submit samples and quote prices.

UNITED ELASTIC CORPORATION

EASTHAMPTON, MASS.

Sales Agent:

Roy Schrimshire

P. O. Box 906, Columbus, Georgia

Hosiery Co., a division of Chadbourne Hosiery Mills.

The firm of **James A. Starck** has been appointed sole agents for **Johnson & Bassett** for the United States and Canada, specializing in the selling and servicing of textile engraving machinery.

Kali Manufacturing Co. has appointed A. R. Hoover III, Concord,

Mr. Hoover

N. C., as southern representative. His territory will be North and South Carolina.

As a result of its well-established product diversification program, the **Kold-Hold Manufacturing Co.** has changed its corporate name to **Tranter Manufacturing, Inc.**

Harvey E. Eastling has been made assistant general manager of **Link-Belt Co.'s** Pacific division, with headquarters in San Francisco. He was previously assistant sales manager.

J. Robert Potter has been elected vice-president of **Lockwood Greene Engineers, Inc.** He joined the company in 1939 and became a director in 1951.

A service company to provide labor to overhaul, widen, motorize, or do any special type of work pertaining to Draper looms has been organized by Wilburn Asbury, B. M. Cooper, and E. H. McCurry. It is known as **Loom Service Co.**, Box 544, Taylors, S. C. Mr. Asbury was formerly with Emil V. Wilson Co., Inc.

Elmer Ward, president of Goodall-Sanford and the Palm Beach Co., has accepted appointment to the textile advisory committee at **Lowell Technological Institute.**

Minneapolis - Honeywell Regulator Co.'s industrial division has announced that 22 sales engineers and 24 service engineers have been added to its field force.

Materials Handling Products Corp. of Syracuse has been appointed to distribute **Yale & Towne Manufacturing Co.'s** industrial truck products.

Jones & Hunt, Inc., was recently appointed as sales representative for **The National Drying Machinery Co.** in the New England territory. It is headed by B. M. Jones, formerly sales manager of Rodney Hunt Machine Co.

Five changes in management organization of **Oakite Products, Inc.**, were recently announced: H. Liggett Gray, former vice-president, was elected second vice-president; Frank L. Olroyd was named vice-president and in addition will remain general sales manager; Eustace Lingle and Van Dorn C. Smith were made vice-presidents; and George M. Seib was elected assistant manager to the office of secretary of the company.

Paul A. Coffman, with the firm since 1934, has been elected vice-president of the **Omega Machine Co.** Omega is a division of Builders Iron Foundry, Providence, R. I.

Pfaff Industrial Sewing Machine Corp. has moved to new quarters at 1140 Broadway, Suite 1606-1607. The firm has announced also the appointment of Kellogg Machine Sales Co., Andover, Mass., as exclusive distributors to the apparel trades for the New England area. Waters Kellogg, formerly with Reece Corp., heads Kellogg Machine Sales.

SUPPLIERS News
WHAT THEY ARE DOING

Ward H. Bushee has been elected a vice-president of **Roberts Co.** of Sanford, N. C., manufacturers of high-

Mr. Bushee

draft spinning frame change-overs. He was previously chairman of the carding and spinning committee at J. P. Stevens & Co.

Dr. C. Scott Althouse, president, **Althouse Chemical Co.**, recently received the honorary degree of doctor

Are You Getting a Fair Day's Work for a Fair Day's Pay?

As Production Engineers we specialize in the utilization of

LABOR — EQUIPMENT — MATERIAL

Our list of clients reads like the Blue Book of American Manufacture, and in our files are many expressions as to our service and results accomplished, like the following:

"Of all the industrial engineers with whom we have had contact, we entertain a higher regard for this organization than any other, and that is based on results entirely."

A LARGE MIDWESTERN MANUFACTURER of HOSIERY, NIGHTGOWNS, PAJAMAS, ETC.

Write for a free copy of "Labor and Management Benefit by Industrial Engineering Principles," and our booklet "A Fair Day's Pay and in return A Fair Day's Work".

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J. J. SKELLY, Vice Pres. and Gen. Mgr.
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NEW YORK 17, N. Y.

GRANT BUILDING
PITTSBURGH, PA.

H. B. CRAFT, Vice President
in Charge of Southern Operations
30 CAMDEN ROAD
ATLANTA, GA.

SUPPLIERS News
WHAT THEY ARE DOING

of textile science from **Philadelphia Textile Institute.**

Raymond J. Payne was recently appointed sales manager in the states of North Carolina and Virginia for **Pioneer Heddle and Reed Co., Inc.,** and **Frank G. North, Inc.**

Hugh D. Luke has been made manager of **Reliance Electric & Engineering Co.'s** newly organized central production planning department, with James A. Brandt serving as his assistant. In the Ashtabula, Ohio, plant, A. S. Tusin was promoted to superintendent; Robert B. Adams to night superintendent; and Henry C. Dettenmayer to production manager.

Upon his retirement from **Draper Corporation** after 49 years of service, William H. Chase, director of advertising, was honored at a testimonial dinner given by friends and business associates. Mr. Chase, who is 84 years old, became famous for his writings in Draper's "Cotton Chats."

R. P. Anthony has joined **Seydel-Woolley & Co.** as technical sales representative of the finishing chemicals division. He was formerly at the Cramerton division of Burlington Mills.

Mr. Anthony

A housewarming, attended by three hundred people, was held at the recently opened New England office of **Sandoz Chemical Works, Inc.,** at Hudson, Mass. Offices, laboratories, and the warehouse and standardizing facilities, were on display.

Standard Pressed Steel Co. has announced that the firm of Cooper Precision Products of Los Angeles has become a wholly owned subsidiary. No changes in management policy are planned.

To commemorate its 100th anniversary, a Jubilee Album was issued by **Societe Anonyme Adolph Saurer,** Arbon, Switzerland, which included a history of the firm and a number of drawings in color depicting various scenes in and around the plant, as well as portraits of the founders.

Joseph H. Windle, Jr., formerly sales manager for Lestershire Spool & Manufacturing Co., now has his own business as manufacturers' agent, with headquarters at 231 South Main St., Providence 3, R. I. Among other lines, he represents Engineered Plastics, Inc., Gibsonvile, N. C., in the New England states.

G. E. Hart is now sales and service engineer for the **Morris Speizman Co.** He will specialize in the sale and service of the Stibbe line of interlock

Mr. Hart

machines and other circular knitting equipment, working out of the Charlotte, N. C., headquarters.

The new manufacturing plant of **Westinghouse Electric Corp.** in Atlanta, Ga., to be completed early in 1954, will enable the company to bring under one roof certain office and factory personnel currently working in separate locations. Ground was recently broken for the firm's new Research Center, located ten miles out of downtown Pittsburgh. Facilities are expected to be completed early in 1955. D. E. Inman, formerly with the Chicago office, has been appointed engineering manager of general industrial products. The company has also announced that more than 23,000 employees are now buying Westinghouse common stock through the firm's payroll deduction plan. This number represents approximately one out of every five employees.

New Canadian agent for the **United States Testing Co.** is W. J. Westaway Co., Ltd., Hamilton, Ontario.

HOW ANDERSON SHIELDS INCREASE SPINNING ROOM EFFICIENCY

Spinning rooms using Anderson Shields save time and money, and prevent disruption when unnecessary breaking, chipping, and splitting of bobbins and spools is avoided. In a year's time these items alone can amount to a surprising sum . . . Insist on Anderson and get the best protection metal shields afford . . . Watch your spinning room efficiency increase!

TEXTILE SHIELD CO., INC.

Metal Protection for Wood Turnings

J. N. ANDERSON, *Treas.*

LAWRENCE, MASS., U.S.A.

Fast shades faster
with the Cibalans®
CIBA

Man-Made Fibers Dyed more Safely with Dyna-Salt

New Dyeing Assistant Improves Dyeing of Dacron, Orlon, And Dynel Alone, Or Blended With Various Other Fibers.

Use Dyna-Salt with Dynadye-V to lower pH to maximum efficiency and properly stabilize the dye bath without using strong acids. It's safer for your workers . . . it's safer for your fibers.

Dyna-Salt gives greater bath control . . . cuts chances of scum or "lake" formation . . . prevents decomposition of dyestuffs.

USE IT WITH AZOIC COLORS
USE IT WITH ACETATE COLORS

Get true, deep shades, get rich, even colors, get better dyeing with Dyna-Salt. Get the full story today . . . write for technical data sheets.

Southern Division:
1819 Spring Garden Street
Greensboro, N. C.

Export Agents:
Tiona Petroleum Company
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Philadelphia 7, Pa., U.S.A.

AMALGAMATED CHEMICAL CORP., Philadelphia 34, Penna.
Ontario and Rorer Streets
Hosiery and Fabric Finishes, Dyeing Assistants and Scouring Agents

Amalgamated

Machinery Replacement Plan Could Cure Some Industry Ills

Textile machinery manufacturers are confident that MAPI's dynamic replacement policy could be a solution to some major ills of the textile industry.

This opinion was expressed by members of the American Textile Machinery Association attending the twentieth annual conference of the Machine and Allied Products Institute where marketing of capital goods, leasing of industrial equipment, and dynamic replacement policy comprised forum topics.

Thomas H. West, president of Draper Corp. and a vice-president of MAPI, said the Institute has done much for the capital goods industries, but, he stressed, "nothing more important than developing its dynamic machinery replacement policy."

Mr. West said, "Guesswork is reduced to a minimum with the use of a formula which offers a scientific approach to this important subject." He pointed out that at Draper Corp. the formula has been used for three years and that every machine replacement has been under the formula. "Whether spending millions or thousands for machinery," he said, "we want to know the money is being put to its most profitable use." He believes the formula to be adaptable to textile machinery purchase and has led the field in making it understood by his customer industry.

Mr. West stressed that the formula could not be labelled as a "selling plan" because often it proved a machine, although well into its prime life expectancy, was still giving economical performance and therefore should not be in the replacement bracket. "The formula," he explained, "is actually a periodic analysis of equipment replacement which provides the textile mill executive with a time table for purchase planning. A textile management may decide, based upon MAPI's plan, that replacement of machinery is desirable a year from now. This gives the firm time in which to contract with the machinery manufacturer for delivery of new equipment at a specified date, a period in which the firm may provide part of the expenditures for new machinery, and it gives the machinery manufacturer an orderly production and delivery schedule on which to adjust his plant capacity."

"Purchase of capital goods today is both an economic and an engineering decision for textile mill management," stated J. Hugh Bolton, president of Whitin Machine Works and a member of the executive committee of MAPI. "Added income and cost saving are equally important factors in a mill executive's evaluation of new machinery purchases. A highly competitive textile market and widely diversified production make a sound replacement policy mandatory for profitable mill operation," he said.

Robert Leeson, president of Universal Winding Company and a member of board of trustees of MAPI's Council for Technological Advancement, said that great benefits in increased production and decreased costs could result for the entire textile industry if the dynamic replacement policy were generally adopted. "However," he cautioned, "other factors such as adequate depreciation allowances on textile machinery must be obtained in order to further encourage mill modernization to the fullest extent."

Appearing on the forum discussion of the dynamic equipment policy, D. M. Pattison, vice-president of The Warner & Swasey Co. stressed the necessity during "good times" of proper spade work in convincing users of machinery the vital need of a replacement plan in order to keep the flow of business an orderly one.

"MAPI's formula for dynamic equipment policy should be a two-way effort to solve mutual problems of the buyer of machinery and the seller of machinery," stated Mr. Pattison. "General adoption of the formula should bring great benefits to our customer industries, as well as to machinery manufacturers."

3 TIMES THE WEAR

Super-Stroke Picker Sticks outwear ordinary picker sticks on an average of 3 to 1! That's because the shock - resisting vulcanized fibre insert — bonded under heat and pressure — never separates from the wood! This patented design resists splitting and warping and triples the life of the stick. Available in all styles and sizes. Order today from

NORRIS BROS.
GREENVILLE, S. C.

NORRIS Super-Stroke
PICKER STICKS

Representatives:
R. E. L. Holt, Jr. and Associates, Greensboro, N. C.
Morris R. Copeland & Co., Griffin, Ga.

News in Brief

(Continued from page 85)

Nylon Carpets Reflect Qualities. According to case histories, Nye Wait Company's 100 per cent nylon carpets are purchased by beach resort hotels because nylon is not weakened by mildew and because it is not palatable to moths. The hotels are closed during the off-seasons.

Physical Standards for Cotton. The U. S. D. A. has announced proposals for physical standards applying to Good Middling and Spotted cotton.

Record Prosperity. Secretary of Commerce Sinclair Weeks recently told the Manufacturing Chemists' Association, "There are many indications of record prosperity. We have high personal income, high employment, high savings and high spending. Business is planning higher expenditures for new plant and equipment in the second and third quarters of this year than was anticipated. I believe that all this evidence points to a

Cotton Textile Merchants Honor Saul Dribben

The Association of Cotton Textile Merchants of New York observed the 35th anniversary of its founding on June 17, with the presentation of a commemorative gavel to Saul F. Dribben (right), president of Cone Mills Inc.

Mr. Dribben was honored as a "master merchant" in textiles in token of a lifetime of activity in the cotton textile markets and of a period of service through the Association for the industry's common good dating from its inception in World War I when he served as a member of its original Board of Directors. He is chairman of its board today.

W. Ray Bell, president of the Association, presented the gavel.

Members of the present board and of past boards on which Mr. Dribben has served were in attendance at the informal gathering in the Association rooms at 40 Worth Street.

What your plant can
accomplish
with Vision Screening

We have just made up a report of savings made by 59 plants:

Big savings in *cost of training new employees* (as high as 75%); reduction in *accidents* and *spoilage;* labor *turnover* reduced 30% or more.

Also increased earnings of employees, less absenteeism, and other gains.

Briefly summarized in a Booklet—which we'll be glad to send to any personnel official on request.

Keystone View Co., Meadville, Penna. Pioneers in Binocular Vision Testing.

KEYSTONE
OCCUPATIONAL
VISUAL SERVICE

Control **MAXIMUM PRODUCTION**
with G. S. HAND TACHOMETERS *and* SPEED INDICATORS

1% Accuracy for any range from 30 to 100 000 RPM or surface speed.
Antimagnetic durable mechanism.
Efficient repair service at moderate charges.

IDEAL FOR MOTORS - SHAFTS - SPINDLES - LOOMS - TURBINES - FOR TEXTILE AND POWER PLANTS

WRITE FOR ILLUSTRATED FOLDER
GEORGE SCHERR CO., INC.
200-L LAFAYETTE ST. • N.Y. 12, N.Y.

FRANK G. NORTH
INCORPORATED
MANUFACTURING CHEMISTS
Atlanta, Ga. • P. O. Box 123, Sta. A • Phone RAymond 2196
Marietta, Ga. • P. O. Box 92 • Phone Marietta 9-4323
The Nation's largest manufacturer of Sizing Compounds, Gums, Waxes and other kindred products for all warp yarns.

continued high level of business activity—certainly for the immediate foreseeable future."

Courses in Accident Prevention. The fall term, evening program in industrial and traffic-accident prevention training offered by the Center for Safety Education, New York University, begins September 21, 1953. Information about the courses and activities may be secured by writing the Center for Safety Education, New York University, Washington Square, New York 3, N. Y.

Door-to-Door Sales Problem. Door-to-door canvassers have become such a problem in Austria that the retail trading associations have decided upon counter measures. The associations have published a small booklet with verses and illustrations to show the poor quality goods being hawked by many of the salesmen who offer low quality goods for relatively high prices and so persuade the public to waste money on useless merchandise.

Short Course on Materials Handling. An intensive technical short course will be conducted simultaneously with the annual Industrial Packaging and Materials Handling Exposition and the National Protective Packaging and Materials Handling Competition at Mechanics Hall in Boston the week of October 19. Sessions on elementary problems of protective packaging and materials handling will be presented concurrently with sessions on advanced and more technical topics on textiles and mill products.

Postal Parcel Limits Unchanged. The Postmaster General has determined that he would not be justified in administratively reforming parcel post size and weight limitations, the Post Office Department has told the Interstate Commerce Commission.

First Bale on New York Exchange. The first bale of the 1953-54 season was auctioned for the benefit of charity on the New York Cotton Exchange on June 3. The bale was from Texas, weighed 612 pounds, and was 13 days earlier than the first bale of 1952. The bale was sold to H. Hentz & Co. for $3.40 a pound.

Book on Packaging. Described as a reference for manufacturers, the verbatim proceedings of the National Retail Dry Goods Association's April Conference on Self-Selection Packaging are now available in a bound volume. Available from National Retail Dry Goods Association, 100 West 31st Street, New York City, 1.

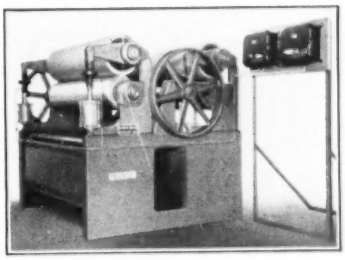
Executive Views the News

(Continued from page 89)

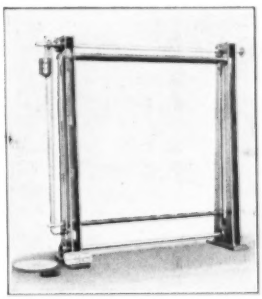
ing him because of his refusal to join a union. He pointed out that his refusal to join, and subsequent dismissal, would mean the loss of his seniority and all other benefits accrued over his thirty years of service. He stressed the fact that the so-called right-to-work statute passed by the North Carolina Legislature in 1947 prohibited compulsory unionism, and that in this respect it should supercede the Railway Labor Act, which permits union shop contracts.

As we have indicated, the suit filed by Mr. Atwell is only one of many. In at least three states—Virginia, North Carolina, and Texas—employees have asked court injunctions to restrain their employers from forcing them to join a union. Some thirteen states have laws or other constitutional provisions which guarantee that employees may retain their jobs whether or not they join unions. To a layman with a very limited knowledge of the law, it would seem entirely fair that no man should be fired because he joins a union and, at the same time, no man should be fired because he preferred not to join a union.

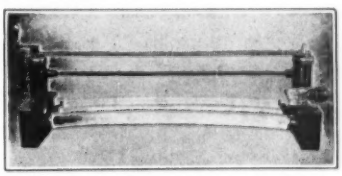
At any rate, it seems rather self-evident that numbers of employees and numbers of representatives of the general public in the South have not accepted the fact that unions should be a "vital necessary force." Professor Harris, please note.



New Tandem Mangle combines water and starch mangle in one unit. Machine is roller bearing with stainless steel or brass bottom rolls and top rubber rolls. Pressure is applied by air cylinders and the machine is fitted with gauges to insure uniform and the desired pressure.



INDIVIDUAL COMPENSATING GATE
for regulating the tension on the cloth or synchronizing machines in range.



Three-Bar Curved Rubber Expander with increased thickness of rubber giving longer life and better stretch, and fitted with trouble-proof bushings. Three Bar and Single Bar Expanders available from stock.

SPREADER AND GUIDER

for keeping goods central and free from wrinkles in open width dyeing and elsewhere. Widths up to 20 feet. Electrically controlled.

BIRCH BROTHERS, INC.

BIRCH TREE

32 KENT STREET
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Phone: PRospect 6-3512
Southern Representative:
Greenville, S. C.
John C. Cosby, P. O. Box 212

HAROLD W. BIRCH CLIFFORD W. BIRCH
CLIFFORD W. BIRCH, JR.

NEW Equipment AND MATERIALS

Other items are described on pages 91, 93, 95

Hunter Universal Tenter Clip.

Lab Type Washer and Dryer

(Continued from page 95)

plete control and recording instrumentation. They will reproduce any factor or combination of factors entering into these phases of textile processing. Mills are using them to develop new methods of handling new blends as well as establishing better methods of handling the older fibers. The entire process cycle, once determined on these machines, is transferred quickly and easily to the regular production line with complete confidence in the result.

Simple in design and operation, so that the smaller mill does not need additional trained personnel, the washer and dryer are also versatile and thorough enough to meet the most exacting demands of highly-trained laboratory technicians.

C. G. Sargent's Sons Corp., Graniteville, Mass.

For additional data, request item H-104, using Handy Return Card on page 198.

Tenter Clip Permits Regular or Overfeeding

A tenter clip now available will operate without pins on any standard tenter frame as a regular clip and will also accommodate overfeeding. (This is the same tenter clip that is utilized on James Hunter Machine Company's Vapojet steam dryer system which was described in TEXTILE INDUSTRIES for June, 1953, page 215.)

The Hunter Universal Tenter Clip will so operate when equipped with the Hunter overfeed device, changing instantly from regular feed to overfeed without any shut-down of the tenter frame. No changing of chain is required, nor is any alteration of machine necessary to effect changeover.

Through elimination of multiple units, use of the new clip will reduce by one-half the floor space re-

SULPHUR-DIOXIDE
HIGHEST QUALITY
SO_2

The chemical with so many uses, Tennessee Liquid Sulphur Dioxide is now available in Cylinders, Ton Drums, Truck Tanks and Tank Cars. The Tennessee Corporation, producers of highest quality Sulphur Dioxide, is located in the textile producing area, assuring closer contact, faster and more efficient service.

Let us consult with you on the many uses of Sulphur Dioxide. Perhaps Sulphur Dioxide can solve some of your problems . . . phone, wire or write Tennessee Corporation, Grant Building, Atlanta, Georgia.

★ CYLINDERS
★ TON DRUMS
★ TANK CARS

TENNESSEE CORPORATION
617-29 Grant Bldg. Atlanta, Georgia

TC TENNESSEE CORPORATION

BARNES SERVICE *Consulting Engineers*
TO THE TEXTILE INDUSTRY FOR OVER ½ CENTURY
Surveys—Reorganizations—New Plant Developments for Cotton, Wool, and Synthetic Yarn and Cloth Processing, Bleaching, Dyeing, Printing and Finishing.
★ Plant Appraisals ★ Mechanical and Operating Surveys — New Methods ★ Scheduling and Planning ★ Work Load Studies, Job Analysis and Evaluation, with Incentive Plans ★ Standard Cost Installations ★ Cost Control Methods.
Labormeter Burden-meter Waste-meter
Member: Association of Consulting Management Engineers, Inc.

BARNES TEXTILE ASSOCIATES, Inc.
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920-923 MONTGOMERY BLDG., SPARTANBURG, S. C.
European Agent, Ralph L. Hodara, 101 Réaumur, Paris 2

Style 2500

Stahmer Wet Process
WOOD SOLE SHOES
Protects the Feet

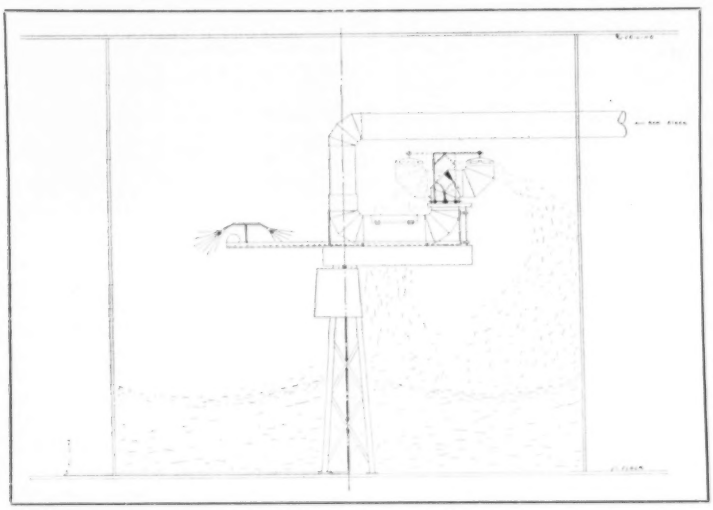
Water, chemicals and dyes rot out leather and rubber soles causing injury to workers' feet. The long wearing lightweight maple soles on Stahmer Shoes give protection plus comfort, and prevent slipping. Heavy leather tops are double stitched and riveted. Cut down accidents and expensive layoffs. Buy direct from manufacturer. Price as low as $2.90 a pair. Sizes 5 to 12. Send for Catalog 33.

STAHMER SHOE COMPANY
Davenport, Iowa

quired for the tentering operation. Operating speeds are the same as with conventional clips. Comb-like plate on clip gives uniform and complete drying of selvages.

Marshall & Williams Corp., Providence, R. I.

For additional data, request item H-103, using Handy Return Card on page 198.



Sketch of Truslow blender showing principle of operation.

Automatic Raw Stock Blender for Wool and Synthetics

Recently developed for thorough blending of wool, synthetic fibers, asbestos and cotton is a machine which automatically beds the fibers over and over again in the blending room by controlled air currents and moving, mechanically arranged pipe that actually travels over the blending room spreading small tufts of fibers over the bedding area.

Oil emulsions, fugitive dyes, and anti-static solutions can be applied to the stock at the same time by a spraying apparatus incorporated in the blender.

As can be seen in the accompanying drawing, the blender is mounted on a frame or tower in the top of a building. It revolves six or more times per minute, throwing into the air the small tufts of fibers which fall to the bed of stock on the floor below. Thousands of pounds of stock can be blended at one time.

Grover C. Truslow, 315 Boone Road, Leaksville, N. C.

For additional data, request item H-113, using Handy Return Card on page 198.

Direct Spinner Utilizes Prism to Break Filaments

Less strain on the filaments, more uniform fiber length, more even yarns, and capacity for production of much finer yarns are advantages afforded by the Stains direct spinner for converting tow to yarn in one operation by the following method:

Tow, after passing through a holding device, is stretchbroken between two groups of rolls. Breaking of filaments is effected by passing tow under tension over a prism having blunt edges. Prism determines breaking points and controls length of the cut pieces. Before entering delivery rolls, broken filaments are collected in an adjustable condenser which reciprocates to prevent wear on rolls at one point. A belt moving at the same speed as the filaments keeps the filaments parallel until they are gripped by the delivery rolls and twisted.

Drafts from 5 to 50 are obtainable. Roller bearing spindles with auto-

Orr
SLASHER
Cloth
With Special
Chemical Treatment
Something New and Better

● Slasher Cloth is an important maintenance item in a cotton mill. With the introduction of ORR Slasher Cloth with Special Chemical Treatment, many of the problems which have pestered the slasher room foreman have been eliminated.
The slasher room foreman, in order to satisfy the superintendent and the cost department, must have available a Slasher Cloth that:

1. Dresses the yarn properly.
2. Holds its width. No shrinkage.
3. Maintains level production performance
4. Starts fast — lasts long.

ORR Special Treated Slasher Cloth maintains uniform dressing properties, resists bacteria and steam degradation, maintains dimensional stability. Discuss your Slasher Cloth problem with your ORR representative.
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279 Union St., New Bedford, Mass.
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718 Queens Rd., Charlotte 7, N. C.
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Box 802, Greenville, S. C.
MANUFACTURED BY
THE ORR FELT & BLANKET CO.
PIQUA, OHIO, U. S. A.

Industrial Woolens by Orr
STARTS FAST — LASTS LONGER

matic balancing and knee type brakes, centralized lubrication, pneumatic waste suction device, and low maintenance cost are other features.

Societe de Constructions Mecaniques de Stains, Paris, France.

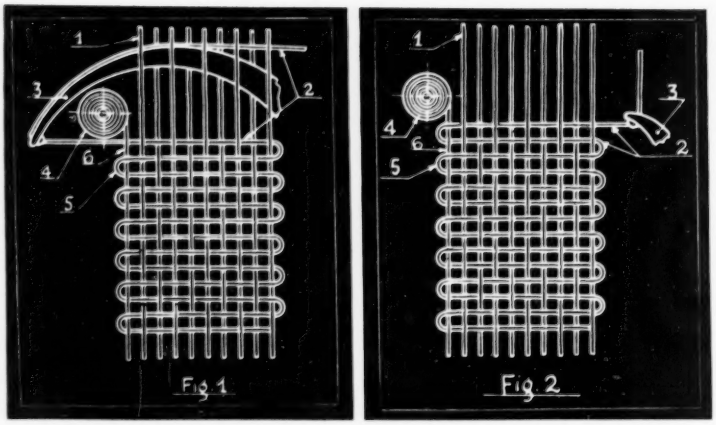
For additional data, request item G-109, using Handy Return Card on page 198.

Shuttleless Tape and Ribbon Loom

Higher weaving efficiencies, higher speeds, and increased labor productivity are benefits to be derived from use of a recently developed Italian shuttleless tape and ribbon loom which utilizes the principle of needle filling insertion.

Tapes produced on the loom have identical selvages on both sides. Also, the method by which the selvage is formed does not hinder the thread density in any way.

To insure filling tension being constant at all times for efficient weaving, an automatic motion is provided which stops the loom when filling breaks or becomes excessively slack.



How the Texnovo shuttleless tape and ribbon loom operates.

The working principle of the loom is illustrated in the accompanying Figs. 1 and 2. Fig. 1 shows the tape with the shed open, penetrated from the right hand side by the needle (3), (1) being the last warp thread at the left hand edge controlled by the heddles. At the end of the curved needle is a small eye through which the filling thread (2) passes, forming a loop at the left hand edge through which a small spool of thread (4) can pass. Movement of the spool vertically locks the loop of filling so that when the needle returns to the right hand side (Fig. 2), the double filling pick is securely held in position. A special feature of this patented method of holding the filling is the positioning of a thin steel wire at (6)

Clipper
BELT LACING EQUIPMENT
For Belts and Tapes 1/16" to 3/8" thick
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Proven by use and comparison, Clipper Belt Hooks assure longest service. Made from uniformly high quality, fatigue resisting wire produced exclusively to meet our rigid specifications. For easy application and maximum uninterrupted service, use GENUINE Clipper Belt Lacers. There is a type and size for your needs.
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SPINDLE SHAFT GEARS
Kluttz Machine and Foundry Company
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running parallel to the last warp thread and stiffening the latter when withstanding the tension of the filling as the needle is being withdrawn.

The loom is supplied in three types. The smallest, type TX 2, is a small, self-contained, high speed loom weaving two tapes side by side, each up to 1⅝" wide.

The two larger models are the type TX 10 and the TX 20, respectively, weaving ten and twenty tapes side-by-side. A unique feature of these looms is that the warp yarn may be supplied on larger beams (similar to those used on broad looms) holding sufficient warp for ten tapes, though the normal type with one or more individual warp bobbins to each tape may also be employed. The use of large warp beams, when feasible, gives a greater length of warp with the consequential reduced amount of supervision.

Texnovo, S.P.A., 8 Via Revere, Milan, Italy.

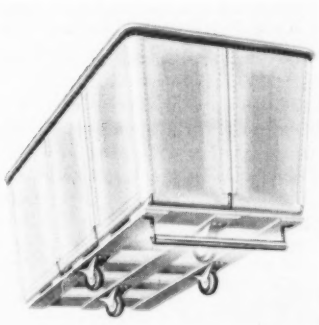
For additional data, request item H-209, using Handy Return Card on page 198.

Doffer Truck Magnet Picks Up Travelers, etc.

A doffer truck magnet has been developed for picking up tramp iron as the truck moves around the textile mill. This tube-type permanent magnet is attached to the under side of the doffer truck and permits collection of traveler rings and other iron and steel pieces as the truck passes.

The hanger brackets are spread slightly to remove the magnetic unit for cleaning. The magnetic tube is easily cleaned by wiping with a cloth and then put back on the brackets attached to the truck.

The unit consists of a 1" diameter aluminum tube within which are the Alnico V permanent magnetic elements. Steel mounting pins extend from each end of the tube. Adjustable mounting brackets are furnished with each magnet. The unit is made in five standard sizes: 12", 16", 20", 24" and 28" wide.



View of under side of doffer truck showing magnet (Eriez).

Eriez Mfg. Co., 1945 Grove Drive, Erie, Pa.

For additional data, request item H-305, using Handy Return Card on page 198.

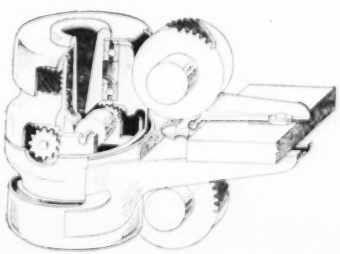
Yarn of Mule-Spun Quality from Ring Spinning Frames

Soft-twist yarn like that produced by self-acting mules can now be made with greater economy on ring spinning frames equipped with the DT-Spinnkopf, a novel drawing roller spinning head which replaces the conventional ring spinning frame drafting assembly. Nearly all types of ring spinning frames can be modified by installation of the device.

The spinning head is equipped with a pair of delivery rolls and has two drives — the lower drive for rotation of the delivery rolls around the yarn axis to give the first twist and the top drive of the delivery rollers by means of a toothed cap with two pinions, giving draft and delivery.

This arrangement provides a wide range of draft and twist and permits adjustment of draft and first twist. By means of intermediate gears

Cut-away sketch of drawing roller spinning head.



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WRITE TODAY. YOUR INQUIRY WILL GET PROMPT ATTENTION

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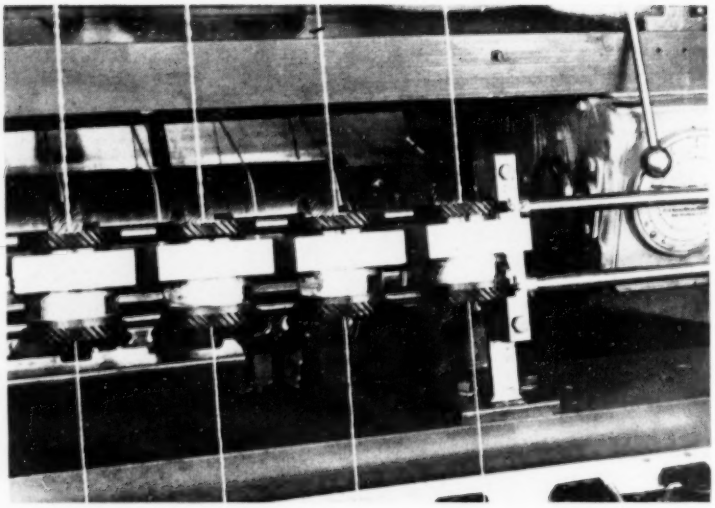
PA.

in the headstock, it is also possible to regulate draft and twist independently. Similar to the self-acting mule, the device gives the right first twist to the roving over the whole length between the cylinders. Thus, the roving can obtain the suitable first twist and strength so that soft-twisted yarns as well as short stapled coarse yarn can be spun on the ring frame.

Stellite American Corp., 60 East 42nd St., New York 17, N. Y.

For additional data, request item H-306, using Handy Return Card on page 198.



Close-up of spinning frame equipped with the drawing roller spinning head (Stellite American).

Winder Achieves Constant Tension Electrically

Tension that is constant from start to finish of the winding operation is maintained by the Hobbs "Alquist" winder, a machine manufactured in Europe since 1946 and now available in the United States.

It winds up on a roll or on a spool a wide variety of materials, electrically maintaining uniformity of tension throughout the diameter of the roll, providing a positive and easy adjustment of any winding tension.

The unit is efficient, neat and compact in design, and easily installed, requiring only a hook-up to the present power outlet. Very little service or maintenance is required, but repairs can be easily made if needed.

Hobbs Mfg. Co., 26 Salisbury St., Worcester 5, Mass.

For additional data, request item H-307, using Handy Return Card on page 198.

FERGUSON GEARS

FOR OVER 25 YEARS
A WATCHWORD IN SERVICE AND QUALITY

Write For Stock Sheet on Textile Gears

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GEAR COMPANY
GASTONIA, NORTH CAROLINA
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EAST POINT, GEORGIA

Hugh Williams & Company, Toronto Canada—Canadian Representative

Device Oils, Conditions, Tints, and Controls Static on Fibers

Uniform application of oil, stain, water, and anti-static liquids, better fugitivity, less brush waste, and improved processing at subsequent operations are advantages to be derived by using the new Uxbridge Duplex Metering Pump Control Spray on Pin Drafters. Special accessories are available for application of the equipment to gill boxes, drawing frames, cards, etc.

(This applicator, manufactured by Bachmann-Uxbridge Worsted Corp., is an improved model of the one announced in TEXTILE INDUSTRIES for May, 1950, page 175.)

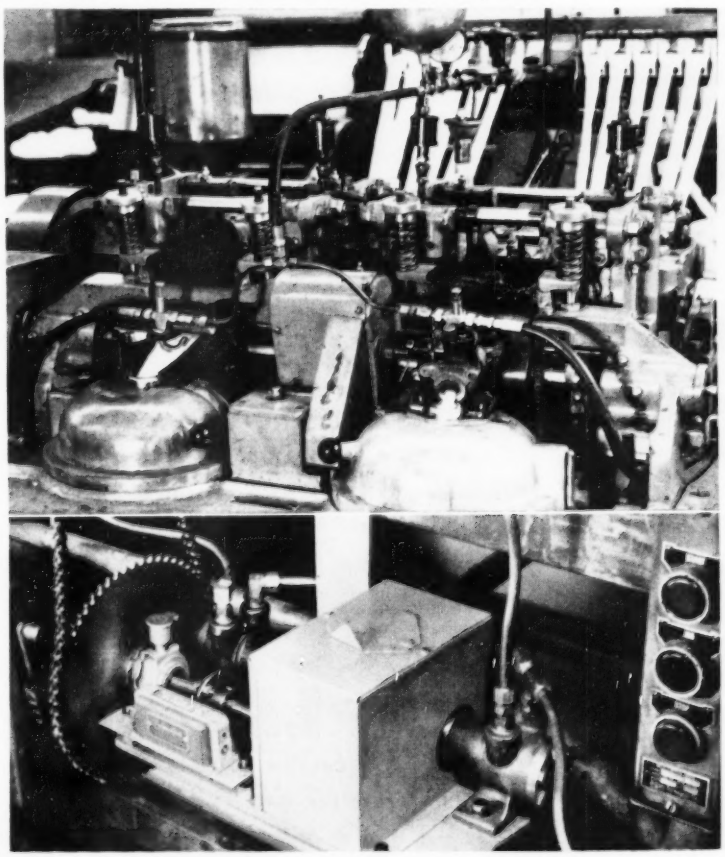
Filtered liquid is supplied from a bottle mounted on its own floor stanchion, through two individual metering pumps driven by non-slip gearing from the Pin Drafter or other machine. Spray nozzles using low-pressure air can be mounted behind the draft area, or preferably in special housings above the coiler heads to reduce corrosion and improve pin life. The pumps start and stop with the Pin Drafter to eliminate dripping; automatic air control is also available. A crank and collecting funnels are provided to replace the spray heads in cleaning the lines when changing tints. The enclosed front end spray housings include stop motions for both too taut and too slack fiber conditions, and a liquid indicator or guard.

The pump assembly permits 80 gear ratio changes to provide approximate 5% steps in rate of application. Bronze pumps are recommended for straight water application, or in cases not suitable for the standard steel-cast iron pumps.

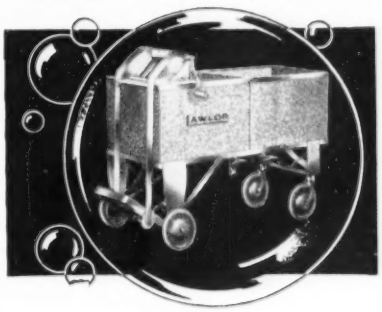
E. H. Jacobs Northern and Southern Divisions of the Bullard Clark Co., Danielson, Conn., and Charlotte, N. C., respectively, exclusive distributors.

For additional data, request item H-101, using Handy Return Card on page 198.

Pin Drafter equipped with the Uxbridge Duplex Metering Pump Control Spray. Pump is shown in close-up photo at bottom.



LAWLOR
MOPPING TANKS



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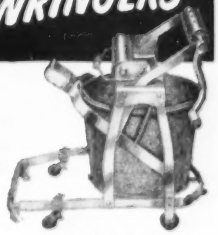
8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • Hand or foot pressure wringers • Perforated roll wringers • Special drain shut-offs • Hot dipped, galvanized chassis and frames • Rubber tired, cadmium plated steel wheels.

LAWLOR
MOP WRINGERS



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turning wringer made: there are bearings at ends of rollers.

EASY
to bring rolls together; the foot lever is perfectly balanced.

EASY
to move wringer: self-adjusting front casters raise metal feet from floor when you're ready to go.

The LAWLOR No. 2 accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

LAWLOR No. 6 TWIN is like the No. 2 Wringer in general construction, but accommodates two pails.

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Cotton
4's to 30's

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—but of utmost importance to YOU!

Your Ring Travelers directly affect the spindle speeds in your mill and the quality of your yarns. It pays to use the *right* travelers to perfect your spinning and protect your profits. We make many thousands of different styles and weights of ring travelers and will gladly recommend the *right* travelers for your use. Write, wire or phone for prompt action. National Ring Traveler Company, Pawtucket, R. I., and Charlotte, N. C.

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L. A. LEE Company, Inc.
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NEW Equipment AND MATERIALS

Want More Information on These Items?

Use Handy Return Card on page 198, giving Key Number (H-600, etc.) which appears after the name of the supplier of the item in which you are interested. Or, if you prefer, write supplier direct. Several of these were on display or announced during the Knitting Show.

A new **condenser tape for cards** is oil resistant, non-stretching, edges do not ravel, stock does not cling to it.

Howard Bros. (H-210).

Jet Spray **belt dressing** for all leather, rubber, and fabric belts is a special formula liquid belt dressing in a pressure-type dispenser. Easy to use, no waste, and uniform coverage with immediate results. Penetrates efficiently, restoring flexibility and maximum grip.

Warren Belting Co. (H-211).

For handling corrosive and highly volatile fluids and for processes where vacuum is used is a new **fractional horsepower model centrifugal pump.** Designated Chempump, it is a seal-less, leakproof unit totally closed from atmosphere.

Chempump Corp. (H-212).

A **platform truck** with a hinged platform and hinged operator's pedals has been developed for use on freight elevators with insufficient depth to accommodate conventional units.

Elwell-Parker Electric Co. (H-213).

Standard models of **proportioning pumps** meter precise quantities of viscous materials, slurries, suspended solids, and corrosive liquids in a range of from 0 to 100 gph at pressures to 1200 psi. Special units are available with capacities to 300 gph at pressures to 20,000 psi.

Walter H. Eagan Co., Inc. (H-214).

The functions of a **hand truck and step ladder** are combined in one labor saving unit known as the "Step-truk."

Fairbanks Co. (H-215).

A **silicone content roof coating** is now available. Designated "Siliconed Rufferseal," it saturates and preserves roofing felts and remains elastic and waterproof longer. Has greater resistance to oxidation; gives freedom from checking, cracking, and sagging.

The Monroe Co., Inc. (H-216).

A **single-phase motor** that is both capacitor-start and capacitor-run is made in 5-, 7½-, and 10 hp ratings, and is a 4 pole 220-volt, 60 cycle motor.

Westinghouse Electric Corp. (H-220).

To provide for the operator a greater working surface and to prevent catching, snagging, and marring of material in process, an **extension board** has been developed for the Amco individual stand for sewing machines. Designated Style EB53, it is available in 16" and 8" widths. An **individual steel trough** is now being marketed for mounting on the stand.

American Safety Table Co., Inc. (H-221).

A **measuring microscope,** Optometer Model GR, for examining weaves, twist, measuring fibers, etc., is available in two magnifications: 20 power and 40 power.

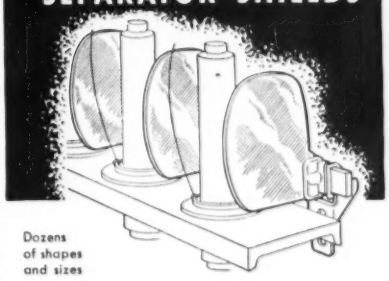
National Instrument Co. (H-222).

Tough, flexible, and water-retardent **flooring and surface coating material** known as "Surco" binds to masonry, concrete, plaster, wood, glass, and metal. May be used on roofs, floors, platforms, drives, sidewalks, to stucco and plaster walls, and as a concrete wherever vibration is a problem.

Surface Coatings, Inc. (H-223).

A **magnetic amplifier adjustable speed drive** without tubes of any sort, called the Franklin Drive, is

Permalite ALUMINUM ALLOY SEPARATOR SHIELDS



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- Fewer ends down—some mills report 27% less
- Use two numbers lighter travelers for higher-strength yarn
- Polished aluminum blades stronger than steel—much lighter—cost less
- Non-slotted blades mean less wear on yarn, less lint, fewer slubs
- 7,000,000 in use by more than 400 mills

Coleman Co., Box 3597, Greenville, S. C.
Roy Schrimshire, Box 906, Columbus, Ga.
Matthews Equip. Co., 93A Brdwy., Prov., R. I.
Don O'Hair, Box 8254, Charlotte 8, N. C.

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Shipments are made promptly—glacial or standard strength solutions—in aluminum tanks or barrels.

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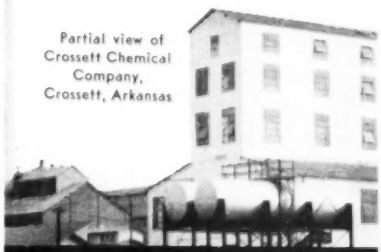

Partial view of Crossett Chemical Company, Crossett, Arkansas

CROSSETT CHEMICAL COMPANY
CROSSETT, ARKANSAS

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POSITIONS OPEN—MEN WANTED: Worsted yarn mill mgr.; production mgr. sweater mill; supt. mill making drapery and upholstery fabrics; woolen cloth mill mgr.; man for pilot plant and research work on dissolving pulp; underwear supt.; asst. supt. picking, blending and garnetting; garnett foremen and fixers; designers and asst. designers for woolen, worsted, cot. and rayon fabrics for mills, and positions in New York; asst. supt. rayon weav. plant. OVERSEERS for Tompkins knit. mach.; woolen card.; pot-up dept.; package dye. 3rd shift; cot. weav. colored fabrics; raw stock and skein dyeing. SECOND HANDS woolen and cot. card.; woolen weav.; woolen finish.; cot. spin.; cot. slash. Mechanical and plant engineers; master mechanics; designers and draftsmen; time study men; industrial engineers; electrical supervisor; salesman to sell cot. piece goods fabrics; power plant supervisor $7500 - $10,000 yr.; loom fixers; knit. mach. fixers; sew. mach. fixer, $2.25 an hr. and overtime.

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PROGRESSIVE MILL IN THE MID-SOUTH HAS OPENING FOR MASTER MECHANIC. MUST BE WELL QUALIFIED IN ELECTRICAL AND SHOP WORK, PIPE FITTING AND MILL WRIGHT WORK. REPLY TO BOX NO. 594, TEXTILE INDUSTRIES, 806 Peachtree Street, N.E., Atlanta 5, Georgia.

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Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
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MR. PLANT MANAGER

MY GREAT EXPERIENCE AS WORSTED SPINNER AND SYNTHETIC YARN EXPERT IS AT YOUR SERVICE. AVAILABLE ON SHORT NOTICE AS SUPERINTENDENT OR TECHNICAL ADVISER. REPLY TO BOX NO. 592, TEXTILE INDUSTRIES, 806 PEACHTREE STREET, N.E., ATLANTA 5, GEORGIA.

TERRY TOWEL MAN

Southern manufacturer is seeking man in his thirties who knows terry towel manufacture, especially the weaving and designing end. Bright future for the right man; base salary and bonus. Box 597, Textile Industries, 806 Peachtree St., N.E., Atlanta, Ga.

FOR SALE

Brand new Fibre Glass Super-Heater—never uncrated by purchaser. Original price $2,600. Effective heating area 80" x 36", overall dimensions 90" x 44". Wired for operation on 220 volt, 60 cycle current, single or three phase. Includes switch, magnetic contactor, Brown Pyrovane temperature control. Carries new heater warranty. Top temperature 700° F. Heat uniform over entire surface. Chance for a real bargain—act today! Address best offer to Box No. 600, TEXTILE INDUSTRIES, 806 Peachtree Street, N.E., Atlanta 5, Georgia.

TEXTILE FINISHING MACHINERY EXECUTIVE WANTED

Immediate opening with a major manufacturer of textile wet finishing machinery. The man we want will have overall responsibility for the entire product and marketing operation. He must have technical experience and contacts, and the ability to coordinate sales activities and policy. Send full details in first letter. Reply to Box No. 598, TEXTILE INDUSTRIES, 806 Peachtree Street, N.E., Atlanta 5, Georgia.

NEW Equipment AND MATERIALS

easily installed so that any machine operator can select the exact speed required. Once speed is set, it remains nearly constant as load on motor changes.

Franklin Control Corp. (H-224).

For **proportional feeding of liquids by gravity,** the Liquifeeder maintains a constant rate of feed and is adjusted by a valve that meters the air admitted to the supply tank. Feed can be varied from less than one half pint per day to more than 500 gallons per day.

Hankison Corp. (H-225).

The new Hydraulic Skid Truk for **inter-plant transportation** of loads up to 1,000 lb features completely hydraulic raising and lowering. Just push truck under skid, step down on pedal, and walk away with load.

Ironbound Box & Lumber Co. (H-226).

Control corrosion in steam condensate system now by use of a film-forming amine, Hagafilm, fed to the boiler in small amounts, on the order of two to three pounds per million pounds of steam.

Hagan Corp. (H-227)

A new type of **steel and hardwood pallet** is assembled entirely without fasteners, eliminating maintenance costs.

Econoweld Corp. (H-228).

To start or stop a fractional horsepower motor directly when a contact making ammeter, voltmeter, or wattmeter reaches a required meter reading; for liquid level control, operating of lights, solenoids, and contactors wherever there is sufficient change in the resistance of a circuit, a new **electronic relay** is available.

General Electric Co., Industry Control Dept. (H-229).

The Type "L" **rotary pressure joint** now available in all standard joint sizes is built with lugs cast on the body to permit use of simple rods to support the joint, thereby removing the weight of the joint proper and its steam and condensate connections from the sealing mechanism.

Johnson Corp. (H-231).

A **demountable industrial wheel** with a "bonded-to-steel" rubber tread that will not slip, stretch, or creep under heavy loads is called the "Rapistan MB."

Rapids-Standard Co., Inc. (H-230).

"Little Gem" **tiny parts cabinets** consist of two 1½" high drawers in a rugged one-piece welded frame and have an overall size of 3¼" x 11" x 11". Storing tiny parts at a minimum distance from those standard size parts that would be frequently needed at the same time, can be accomplished by inserting them in Precision all-steel standard parts cabinets.

Precision Equipment Co. (H-232).

A **speed monitor** now available not only directly indicates speed but intricately controls speed within maximum and minimum limits. It can actuate relays and solenoids to shift gears, operate clutches, signal visually or audibly, control critical temperature of agitated mixtures, control heat in relation to speed on singeing machines, etc.

Jones Motrola Corp. (H-233).

For **evaluating the intensities of odors,** a portable unit for use in the field or in the laboratory has been developed. Known as the Osometer, it permits trained technicians using the same specimen to obtain results whose reading never vary more than 4 or 5%.

Odor Instruments, Inc. (H-234).

Industrial fans offering completely "maintenance free" operation are on the market. Sealed, lifetime-lubricated ball bearings are incorporated in both the fan and the motor so that no lubrication is required.

The Murray Co. of Texas, Inc., Ventilating Fan Div. (H-235).

A 1500-lb capacity **fork lift truck,** designed to provide maximum maneuverability, ease of maintenance, and operator convenience, is called the FL-15. It is capable of stacking 36-inch loads in a six-foot aisle.

The Baker-Raulang Co., Baker Industrial Truck Div. (H-236).

GOOD NEWS

MR. TEXTILE EXECUTIVE:

We have an excess stock of new textile motors in various H. P. ratings, speeds etc. It might pay you to check us before you buy.

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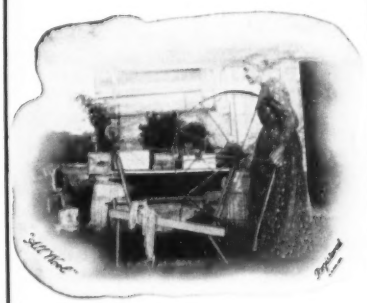

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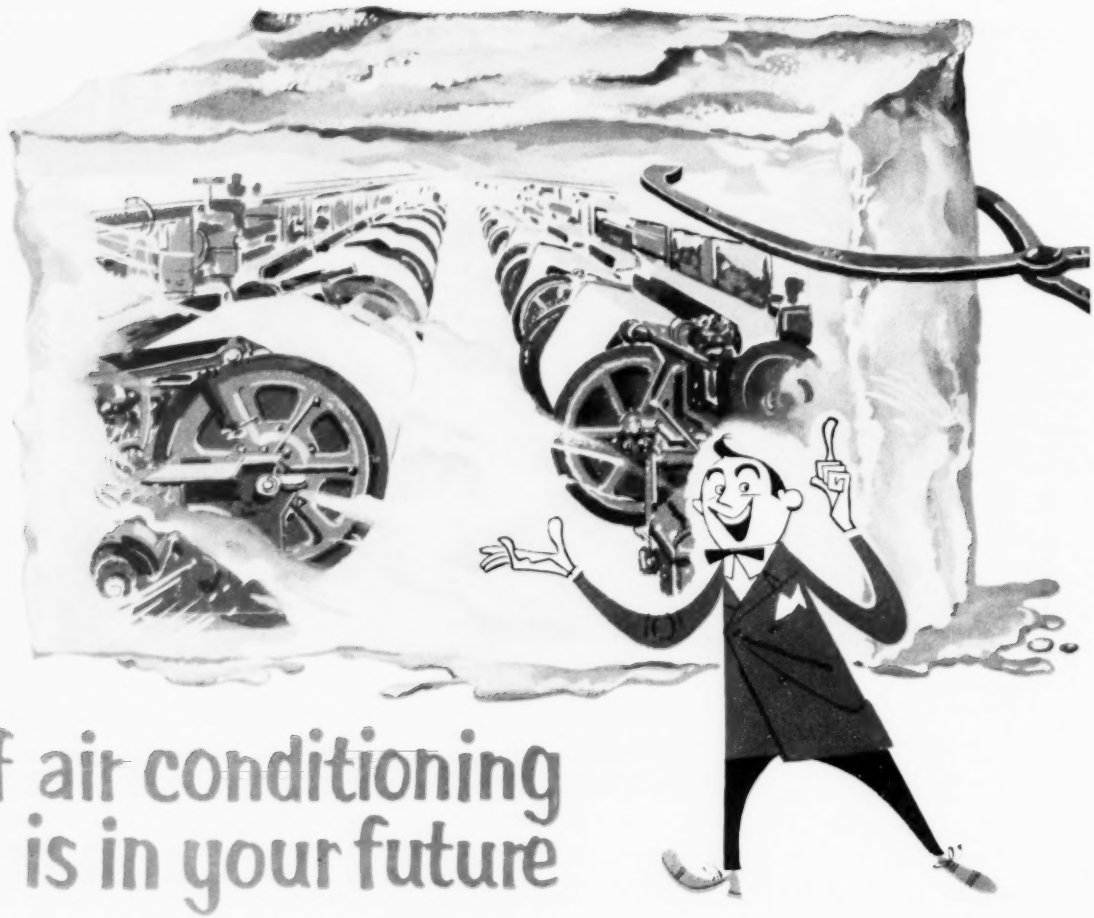

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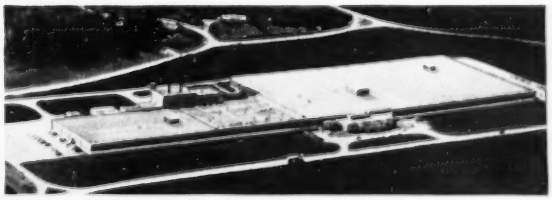

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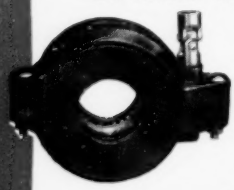

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